









## Original Correspondence.

## THE GOVERNMENT SCHOOL OF MINES, AND EDUCATION OF THE COLLIERIES.

Sir,—I must again claim your indulgence in saying a few words on this simple but still knotty question of the education of the coal miner; and in thinking over the various questions which appear to me to affect the vital interests of the collier, I have not neglected the recent melancholy accident at Lund Hill. Having read the evidence which is already before the public with respect to its origin, I must confess that I cannot understand the reasons which various correspondents assign in their communications to your Journal for abstaining from a free and full expression of their opinions on such a momentous subject as the lives of 182 men, until the close of the inquest. I am unable to see any evil that possibly arise from a contrary procedure, so long as such opinions are stated in a proper spirit, and with a view to adjust, if possible, some of the difficulties which now interpose between the collier and his safety.

On the contrary, I contend that a free expression of views on a subject vital to the interests of the collier and coal owners would materially assist the jury in deducing correct inferences from the evidence, and thereby enable them to recommend such measures to the attention of engineers and other interested parties as would be conducive to the future safety of the unfortunate coal miner.

Before, however, proceeding to give my own views, as one deeply and

practically interested from earliest childhood, with respect to the present

management of inspectors, &c., I will advert slightly to the communica-

tion of "F. M.," which appeared in your Journal of March 14. And, in

the first place, I beg respectfully to inform him that I would not willingly

second to any one in my appreciation of science in its marvellous appli-

cations to practical purposes, increasing the comforts and necessities of

life, and, at the same time, reducing the intensity of manual labour. I

firmly believe that science is a most valuable adjunct to an extensive

experience: and when both are united in the same intelligence, though

possessing only moderate powers of original invention, still I conceive

that a nation will be justified in expecting, what I believe will be realized,

most felicitous results.

With respect to the institution, professors, and lectures in Jermyn-street,

about which your correspondent, "F. M.," speaks in such glowing terms,

have never written intentionally in a disparaging tone, so far as the

sciences of geology, mineralogy, &c., are concerned; these sciences may

be, for aught I know, taught in all their length and breadth, with the

clearness, and eloquence of a Davy, and with the suggestiveness

and comprehensiveness of a Bacon; but I ask, in the name of common

sense, what has this to do in preventing those explosions, which I trust

are now reaching their climax at Lund Hill Colliery? It is not the

science which is taught to a few students in Jermyn-street, but its adapta-

tion to accomplish the object contemplated—the reduction of accidents by

the better education of the collier—which I, and many others besides, am

in question. Who has the real management of a colliery? Not the

appointed engineer, or the student of geology, but the working collier.

Let the public observe the character of the men who are called to furnish

information to the jury at Lund Hill. Do these men know of the exist-

ence of Jermyn-street? Then what benefit can they hope to realise from

few lectures delivered in London to a few hopeful students, at a distance

of 200 miles from the scene of the deadly conflict. I will not say that

such an institution is impotent, so far as the safety of the collier is con-

cerned, but at once point to the sad fact of 300 valuable lives having

been sacrificed within a few months, and thence listen to the plaintive

cry of the widow, the orphan, the friend. Can I ask, a central institu-

tion, like that in Jermyn-street, teach effectually the masses of the col-

liers, so as to contend successfully against the many dangers which in-

terpose between them and their safety? No, is the reply of experience

and common sense. Such an institution may add another to the many

means which Nature supplies in rich and beautiful profusion to teach

man his unerring laws; but does there not require a medium power

to adapt and apply these means to the better education of the collier, in

whose hands alone must be placed the weapons with which to combat

successfully the insidious foe—explosive gases, &c. "How many things

by reason reasoned are to their right praise and true perfection?" Lec-

tures and education respecting collieries are not required in London to

the same extent as they are in the mining districts, where the masses of

the people need instruction in the dangers to which they are daily ex-

posed. Accidents appear to be multiplying apace, for not many days have

passed after the tragedy at Lund Hill ere we had to read of another

fatal calamity at Shipley, Derbyshire. In this case, two different ex-

planations of which have appeared in this Journal, six valuable lives were

lost. I must, however, state that both explanations of this accident ap-

pear to me to be so exceedingly improbable that some other cause, of an

unknown kind, must have produced the accident in question. But the

jury, in accordance with ancient custom, pronounced a verdict of acciden-

tal death, and the Government Inspector, an enlightened and benevolent

man, recommended the use of locked safety-lamps, and which has been

adopted. The miners have to work now with locked safety-lamps. Men

who are not considered to be sufficiently trustworthy and intelligent to

have the ore and free use of an ordinary Davy lamp, are to be sent in

into the midst of danger, minus the power of separating the wire-

gauze of the lamp from the vessel containing the oil. The men still re-

tain the capability of placing the lamp in a position where it may meet

with various accidents or casualties, the effects of which would not

be disturbed by the circumstance of its being locked. May not the roof,

the coal, the workman's pick, still render even this use of the lamp

highly perilous when placed in the hands of men who are considered in-

capable of using it properly when unlocked.

I believe neither the Government, the priesthood, nor the employers of

labour in general, are sincere in their desire to educate the labouring

population, including the collier, of this country. I must reserve any fur-

ther observations on other topics to a future communication.

March 17. COAL-MINER.

MINING SPECULATIONS IN IRELAND—"RIGGING THE

MARKET."

Sir,—Is it not a miserable thing to find that the Irish correspondent

of your Journal no sooner directs attention to the mineral wealth of this

country, on the probability of a great company being established to de-

velop a pair of these riches, than an important evening Liberal paper,

out of its noble disinterestedness to save us from being duped, should de-

vote a whole column of its valuable space to the praise of one company,

and to disparage another that has not yet appeared; and which it will be

quite time enough to criticise when in existence? Oh! this pure philan-

thropy, too evidently written for the purposes of the Irish Mining Com-

pany to deceive or suggest, for a moment, that its object is anything less

than the present and future aggrandisement of this powerful association, who

have hitherto ruled with an iron hand the mineral lords of Ireland, and who

but for that spirit of aggrandisement would have been doubly powerful.

That they have managed tolerably well, employed and encouraged their

talented and honest mining staff is beyond all dispute, and they de-

serve great praise; but that they might not have done much better when

had the whole field to themselves is a more doubtful matter; and

from their past history we would infer that had they pursued a more

judicious course they would have been one of the wealthiest companies in

the empire and, perhaps, they begin to feel some such misgivings, and

feeling they cannot rule the roast as they have hitherto done, their trum-

phets have gone forth sounding their praises, and proclaiming their exceed-

ing excellence, inflicting, as he proceeds, a deserved castigation on some

recent mining companies. But, nevertheless, one cannot help feeling that

there is another spirit pervading the article in question, and which is no-

thing less than, that the Mining Company of Ireland can and shall be the

only one that has any right to exist here. Again, the mining corre-

spondent is severely handled for having misquoted a dividend of 17 per

cent, instead of 15 per cent., but which is only a foil to cover his greater

diffidence in directing attention to the preliminary trials of the Irish Mining

Company on quartz lode in search of copper. Correction of errors is not

the writer's object, it is not so praiseworthy—in fact, it is nothing

less than an attempt to deter new mining companies from pursuing the

same wise course they themselves are doing; or else they have found a

more's mine and are ashamed to confess they have committed a mistake.

Real mine will not be so positive in drawing the unwarrantable con-

clusions that the Editor of the *Dublin Evening Post* does, that quartz lodes

that are productive of ore in one district, are not to be considered as likely to be metal-bearing in another locality.

This assertion would be treated as ridiculous amongst miners; but, perhaps, he will enlighten the public on these curious anomalies, for there are quartz lodes that no competent miner would hesitate to recommend as worthy of a trial, and there are others that he would as carefully avoid; and if the infallible Irish Mining Company have determined to spend thousands in developing this quartz lode, admittedly of a kindly nature, may not other companies, under like circumstances, be warranted in pursuing a similar course?—and is it possible, because a new mining company is to be established, that Ireland is never to possess but one honest and successful one, and that the Irish Mining Company?

Does their zealous advocate know how many thousands were injudiciously spent upon the Ballycorus Works through the incapacity of their directors?—and is he further aware that competent judges are of opinion that, had there been an enlightened body of men at their head, zealous only for the welfare of the shareholders, much larger dividends would have been paid for years past, and their original shareholders would never have been obliged to sell their shares for a few shillings each?

If the present shareholders are the gainers by former mistakes, let them not, through their trumpet in the *Evening Post*, asperse the formation of a great company, that will be composed of many honest and estimable men, and likely to be second to no mining association for intelligence and prudence.—*St. Andrew's-st., Dublin, March 18.* BOUNDY AND SMITH.

## "ONLY JACK."

Sir,—Some years since, being at one of the exhibitions of paintings and sculpture by northern artists, at Leeds, I was much annoyed at hearing the remark it is "only plaster" applied to the finest models in the room. I was at that time induced to write a paper, entitled "Only Plaster," explaining and showing that "only plaster" contained the real merit—that the marble statues, so much admired, are the mere work of time and mechanical appliances.

It amuses me, though it annoys at the same time, to hear the remark "only Jack" made by parties on the "Change, and by parties who ought to know better. Poor despised "Jack" keeps excellent company, and is frequently found to be the father of an excellent family, including copper, lead, and silver. By a sad misnomer, he was called by the "old men" the "mother of lead," but at present is honoured with the more scientific appellation of blende. And now for a little about "Jack." Jack has been, and is still, found in abundance in Cornwall and Devon; also in some parts of Wales, and in the Isle of Man. The back of the Great Laxey Mine is Jack, and the standing of this noble mine is mainly owing to Jack. At this mine the Jack is more carefully dressed than any other; it is cleaned like tin, the lead being all extracted by jiggling-machines, &c. The Jack produced by this mine is very fine in quality, and easily smelted.

Talgaroch Mine, in Flintshire, produces Jack, but under very different circumstances; in the lode where Jack appears the lead disappears, and is not associated with the lead, as at Laxey.

At Fronogoch Mine (one of the Lisburne Mines), there are large quantities of Jack, and the finest and best machinery in the world for dressing it. All the mines should adopt this machine. The inventor, a Cornishman, of the most unpretending manner, will, by the permission of Messrs. Taylor (always cheerfully accorded), show the machine to anyone.

Were this machine in use at Silver Brook Mine, I think she would be enabled to pay dividends out of "Jack" only.

Vast quantities of Jack were found, and still remain, in the back of the richest silver mine ever opened in Cornwall—"Old Shepherds." Jack is also found at East Wheal Rose and Alfred Consols, on the back of the great lode, where it is mixed with copper. It is also found at Boiling Well, at Stray Park, Bal Dhu, Nangiles, Wheal Jane, East Falmouth, Pencorse, and other mines—no bad company to be associated with.

The miners in these localities are always glad to recognise Master Jack, as it is a certain indication of either lead or copper below. Like mundic, Jack is a surface mineral—that is to say, it is most frequently found on the backs of lodes; if on an east and west lode copper in depth may be looked for; if on a north and south course lead may be relied on.

A few years since Jack was not worth raising, as the foreign spelter was so cheap; it would not pay for smelting in this country; but now that spelter is up to such a price, and the consumption is hourly increasing, Jack will pay, though the liberality of the smelters does not allow them to give the miner a fair price for the article.

The price varies from 3*l.* 8*s.* to 32*s.* per ton. The Laxey Mines command the highest price; next to which Pencorse and Silver Brook Mines are valued. At Pencorse, the Jack is chiefly sent away in the rough state—a very judicious plan, as Jack, when bruised fine, is very light, and large quantities escape in the water.

If some of these mines made returns of copper instead of Jack to the amount they do—say, in the monthly ticketing list, Silver Brook, 100 tons copper, at 3*l.* 8*s.* per ton; Pencorse, 80 tons copper per month, price 3*l.* 7*s.* 6*d.* per ton—these mines would be thought much more favourably of than they are at present, though the returning of Jack is not attended by a tithe of the expenses copper entails.

You, Mr. Editor, would do the state some service if you would publish the returns of blende and zinc ore regularly, and let the world see that "only Jack" is a very important article of mining and commerce, and I am fully convinced we should hear less of the contumacious remark, "only Jack."—*March 19.* GEORGE HENWOOD.

## THE BESSEMER PATENT—SHEFFIELD MANUFACTURES.

Sir,—It is well known that in August last Mr. Bessemer seemed to astonish the multitude of chemists and philosophers who either heard or read his new Theory for making Iron and Steel. It is impossible to open a newspaper dated from Sept. to Jan. but there is some kind of composition which relates to the new discovery in making iron without the labour and expense of puddling. Even the *Illustrated London News* set its artist to work and added animated language to the production of the engraver to fill their readers with wonder and admiration of the invention. Lectures were delivered at the Polytechnic, and doubtless the mass of the people were induced to think that Mr. Bessemer had made a discovery which would be a source of wealth, and an imperishable national convenience. Had Mr. Bessemer acted less conscientiously, and offered his discovery to the public, any amount of shares would have been purchased, and he might have reaped a splendid harvest without any risk worth taking into account; but with a degree of honour worthy of a man of true English disinterestedness he took on himself the patent, and is abiding the issue. Having a practical acquaintance with the iron and steel trade, and aware of the insufficiency of a single experiment, I ventured to lay before the public in a short paper the consequences which would follow the introduction of iron and steel manufactured on the new process to several important branches of our great national trade. The medium I employed was *Tait's Magazine* of Jan. last—aware that its readers were not generally inclined to enter elaborately into the discussion of the chemical properties which combine in the construction of the most valuable of metals, but that there were some reasons why they should have a plain and concise description of what the patent process, and the manner in which their interests would be affected by its application to railway and ordinary carriages. I could not have anticipated the amount of anger which this contribution has called forth; but the present number of that magazine contains a letter breathing haste and ire, and denouncing my explanation as "ridiculous," and calling in question my knowledge of chemistry. Of course such assertions are of no consequence to the public, nor have they the least impression on me; Mr. Bessemer is doubtless a chemist, but, like an honest man, he has not tried to perplex the public with chemical dogmas, but has submitted to experiment, which it appears proves very much inferior to what generally was expected. It must be admitted that between denouncing a system as a failure and showing its improper application there is a very wide difference. The advocates of the Bessemer patent were going to remove our dependence upon Sweden and Russia, to have our railways and carriages furnished with cheap iron, to take away the expense of timber by iron beams, and to Bessemerise everything we touch, from a penknife to a ship's anchor; this seemed going too fast, and a little consideration and practical observation was self-evident. It would be very presumptuous for me to attempt an explanation of the Bessemer patent to the readers of this Journal, but my definition in *Tait's* occupies only three lines and three words—as correct an abridgement as I could possibly produce:—"He (Mr. Bessemer) has a receiver for the liquid iron as obtained from the blast-furnace, and he supplies a blast which produces a violent motion of the metal, which afterwards is considered iron or steel." That such a definition is without the chemistry of the question no one will for a moment doubt; but anyone acquainted with the manufacture of iron knows full well that the two injurious elements in the iron ore are not touched by the Bessemer process, and that until the iron will stand the forge-hammer, in a lateral and cross operation, it cannot rank with the English iron at present in use.

The iron produced on Mr. Bessemer's plan may possibly be worked in a groove, longitudinally, and a bar may be presented; it may have a thread put upon it, and a nut applied. In this way it might be used as a support of a building, and so might cast iron, its brittleness would be the same with the slight advantage of having been a little purified from the carbon which was found in the ore, but the sulphur and phosphorus are still there, and the earthy particles which the common process would have worked out, remain untouched, and consequently the danger of such an experiment would soon arouse the fears and interference of those whose business is the preservation of the lives and the property of the people. The same argument is applicable to iron used for engineering purposes—to rails, axles, and springs. In reference to the manufacture of tools and cutlery, there is a still more formidable obstacle to be encountered. It is well known that competition has induced the manufacturers to employ every possible means to cheapen their production, and that the spurious have given an advantage in price, and taken the place of the real, there is plenty of proof. In no branch of the Sheffield trade is that more apparent than in the fork business. Forty years ago that article was generally made of steel forged

with the hammer, and though the common British iron would serve the purpose, if it were sufficiently sound, yet the casting of forks in sand and the application of what is called "run steel," has now almost entirely destroyed the forged fork business; but is that an improvement? Cheapness is unquestionably attained, but quality is entirely destroyed, the French pattern fork, the oval rim, balanse, the Waterloo, which should grace the table of men of means, is now the cast iron which will break with a very slight pressure, and which will turn black when they are used; but so long as they are dry in the cases of the manufacturer they would deceive the most skillful examination. Should any one be over critical on such a statement, it is just to allow that respectable manufacturers never sell the cast fork for the steel one, but the extent to which the substitution of the one for the other has, within the last twenty years, reduced the steel fork making is somewhere about 75 per cent. I could surprise the gentleman who signs himself "A Chemist," with an operation in this article. He thinks he has found a perfect victory over his observation that common cast iron may be allowed to cool in the sand, and will become tougher in consequence; but let these forks be what they call "softened," and I can show him how to put them under the operation of the hammer until their appearance of being cast is almost entirely removed, but when they are cooled they are as brittle and as worthless as ever: the hammering may have changed their appearance a little, but it cannot be so far practised as to improve the quality of the article, in fact, nothing short of the puddling, rolling, or tilting, can secure good, malleable and serviceable iron; and only such material is worth the time and trouble of converting, and its necessary concomitant. In the scissor trade the "cast metal" and "run steel" has long been in use, and has answered better than in forks and table-knives. The reason is, the former are not brought into contact with grease and hot water as the latter necessarily must be, which has the effect of instantaneously destroying that appearance which they may have had imparted to them by the skilled workman. If used for fine work, such as ladies generally perform, the spurious will long maintain their position with the real: the former will sooner rust, the edges will sooner become rough, and should the manufacturer be careless enough to put his name upon them, he will be in a fair way for sacrificing his reputation—supposing him to have any. This description of material, which must bear some striking resemblance to that which is introduced by the Bessemer process, has not been applied to tools which require a strong, sharp, or fine edge—to files or to rasps. The reason is self-evident from the observations already made. There is no fibre, without which such material is useless in that kind of manufacture; and there are other defects which will be shortly explained. From recent accounts, both chemical and experimental, it does not simply appear that "the Bessemer patent may be a failure," but that it is an almost universally established fact that it will not accomplish any of those great purposes which Mr. Bessemer intended, and the advocates of his system—some of them most ignorantly—affirmed. Is the consequence to be oblivion and disappointment; a renewed application on the part of the discoverer, and a further outlay at Baxter House; the investment of money and brains in a fruitless speculation? The confession of our "Chemist," who performed wonders when he "notched and hammered" a piece of "Bessemer iron when it was hot," a furnace-boy would laugh at the assertion, and any person who may be disposed for the time to use a notched and hammered common cast-iron when in that state with the same degree of success.

It was not the object of the paper in *Tait's Magazine* of Jan., to denounce the patent as useless, but to prove the dangerous consequences which attend its application to springs, rails, anchors, and beams, or supporters of buildings; at the same time it was briefly shown that the Bessemer iron might be used in many departments of manufacture; and possibly the best friend to the system which seems daily to be exploding or passing into disrepute is the man who can show some plan in which the patent may be of use in manufacture. The cast metal and the "run steel" of use in cutlery, might be improved by the process. Manufacturers do not like to talk about these productions; they are the secrets of trade in a certain sense. If competition compels them to resort to this substitution; if the markets in America demand a supply at a rate which renders the genuine forged article impossible, and the system of cheapness is considered the triumph of commerce—why not employ the advantages which the patent might secure, and make the bad better at a cost which would be nothing worth taking into calculation; the little extra in the cost would very likely be saved by the manufacturer having less expense in the process of finishing. It may be further observed, that stoves, bars, and other ornamental work in iron might be much improved by the Bessemer process. It is not having the fibre so necessary for malleable and tough iron certainly would be an advantage in this respect, it would have a clearer surface and would admit of a higher polish.



ance companies and to the insurers; yet, from nothing more having been heard of the matter since the La France Company ceased active operations, I suppose it must be presumed that no further measures have been taken for obtaining the reduction of the duty; and I would, therefore, call upon those interested to arouse themselves, and endeavor to relieve us from the tax upon fire insurance, which is now a crying evil, or they will find that some enterprising French company will take a large amount of risks, which would otherwise be insured in English offices.

City, March 16.

### THE CYMMER COLLIERY EXPLOSION.

Sir,—Will you, in common fairness to Mr. Evans, the Government Inspector of Coal Mines for this district, allow me to correct some statements which you have made in your leading article of last week on the Cymmer Colliery trial. In the first place, although you are correct in stating that Mr. Evans's appointment took place in the month of November last, allow me to say that the district was not given up by Mr. Mackworth until Jan. 1, so that Mr. Evans had only been in office for a little more than six months before the explosion at the Cymmer Colliery took place, instead of eight months, as you state.—2. Instead of the Cymmer Colliery being, as you state, "within four or five miles of the Inspector's residence," it is nearly eighteen miles distant from that place, and, too, over a most difficult road to travel.—3. So far from the Cymmer Colliery being "well known to be a fiery mine," as you assert, it was always, up to the time of the explosion, considered to be peculiarly free from fire-damp. The very fact of the air having to travel in one continuous course for nearly six miles through airways, a furnace, and up-cast shaft, which were at several points only from 7 to 8 ft. area, is a complete contradiction to such a supposition, especially when it is taken in connection with the significant fact that throughout the whole of the mine, and for nine long years, the men had almost invariably worked day lengths. Had the colliery, even a fiery one, such a state of things could not have existed for nine days. The evidence of Mr. Beddington, Mr. Daniel Thomas, and others, at the inquest, went to prove that the mine was not fiery, but badly managed.—4. Your observation, that the rules sanctioned by Mr. Evans were "totally destitute of the necessary provisions to be observed in fiery collieries," loses all its force if I have succeeded in showing that the Cymmer Colliery could not be ranked with that class of pits. I regret that these gratuitous assertions respecting the rules sanctioned by Mr. Evans should be so often repeated in your valuable journal, without the least attempt at proof. Had the rules in force been attended to, this accident would not have taken place. Indeed, apart from the special rules, the first general rule provided by the Colliery Inspection Act, if attended to, would have rendered such an explosion impossible. That rule requires that "an adequate amount of ventilation shall be constantly produced at all collieries to dilute and render harmless noxious gases, to such an extent as that the working places of the pits and levels of such collieries shall, under ordinary circumstances, be in a fit state for working. Now, with the diminutive area of the airways, furnace, and up-cast shaft, it was impossible to supply a sufficient quantity of air to carry off the fire-damp which had in small quantities been accumulating, and gradually impregnating the stagnant atmosphere, until, for days before the fatal accident, the "cap" was to be seen on the candle, most surely indicating an inadequate amount of ventilation, and the consequent daily increase of danger. The almost entire neglect of the furnace on the day and night previous to the accident, completed the explosive mixture, and prepared the mine for the catastrophe which followed.

Now, let it be understood that the airways, furnace, and up-cast shaft, had been constructed under the inspection of Mr. Mackworth, and not Mr. Evans, and, consequently, the whole blame of this part of the business is due to the former gentleman, and not to the present inspector. I am at a loss to know why you should screen him, and attack Mr. Evans. As you have given some rather strange remarks of Baron Watson's with reference to Mr. Evans's remarks, which were afterwards withdrawn by that new and eccentric judge, allow me to quote from the same authority the observations which he made in reference to Mr. Mackworth. He remarked:—"Although this colliery had been in operation some nine years, it was never inspected but once, by Mr. Mackworth, the former Inspector, in 1847, and the present Inspector, who had gone to all parts of his district, had never visited this colliery till after the explosion. Mr. Mackworth, according to his own account, went to the mine in 1844; and then in Sept., 1855, although he was in the neighbourhood, and walked over the surface, never thought it worth his while to go down into it, and see whether the instructions he said he had given when he visited it had been carried out." You have frequently on the one hand taken exception to Mr. Evans, on account of his youth, and his inexperience as a miner; while, on the other hand, you have entitled Mr. Mackworth as one of the ablest of the Mine Inspectors. Surely, if Mr. Evans's youth was a disqualification to his appointment, Mr. Mackworth ought not to have been an inspector; for the former gentleman was 27 years old when he commenced the duties of his office, while Mr. Mackworth was appointed at the age of 26. In reference to the comparative experience of these two gentlemen, Mr. Evans was brought up as a colliery agent from his very childhood. He was for 10 years engaged in the largest coal and ironworks in South Wales. But what of Mr. Mackworth? In examinations before committees of the House of Commons, he has twice admitted that he had only "been two years connected with collieries," previous to his appointment, and that his only experience had been in Mr. Powell's collieries, in this district. Now, it is notorious that Mr. Mackworth was only employed to survey a colliery for Mr. Powell—in fact, doing the work of a boy. I do not mention this circumstance in disparagement of Mr. Mackworth, but for the purpose of consistency.

Your last observation on which I shall comment is this:—You contend that two or three of the mines in this district can be inspected in a day. Surely, you can have no idea of the magnitude of some of the coal mines in South Wales, and of the extreme difficulty of travelling through airways, or you would not write thus. Instead of some of the mines in the district taking only a day to inspect, a week would not be sufficient to examine all the airways and working places in an efficient manner. In many places it is necessary to travel for considerable distances over heaps of rough stones on all-fours, and up steep inclines.

You allow the Inspectors 24 days in the year for attending inquests. Now, it happens that the average number of these enquiries amounts to 30 a year, and the distances to be travelled are often very considerable, and the enquiry occasionally prolonged over two or more days: 100 days instead of 24 would have been more like the mark, and, indeed, I question whether that time would be adequate to the proper investigation of the causes of the several accidents.

As the question of the Cymmer Colliery explosion is one of considerable importance, I propose, with your permission, at a future time, to offer a few observations on the evidence adduced at the trial, and the scandalous defence of ignorance which was set up by the manager, who had the responsible charge and direction of the mine; and also to point out the necessity of some more stringent law, to compel colliery proprietors to use ordinary care in the protection of the lives of those employed under them.—*Seance, March 17.*

### THE LUND HILL COLLIERY EXPLOSION.

A LETTER TO SIR GEORGE GREY, NICHOLAS WOOD, ESQ., AND COLLIERY PROPRIETORS.

In 1750, a native of Cumberland, whose name was Spedding, originated an improved system of ventilation for coal mines—that system is said to have been greatly improved by the late eminent Mr. Buddle. Since the said eminent men, who have long been laid in their last resting-place, as regards their mortal remains, there have been others who have risen up under far more favourable circumstances who have also laid down plans of ventilation, for the purpose of putting the coal mines of this country into a better and safer state, so that the health of the poor colliers might not only be improved, but fearful accidents by explosions might be lessened and prevented. Indeed, I question whether the time taken only a day to inspect, a week would not be sufficient to examine all the airways and working places in an efficient manner. In many places it is necessary to travel for considerable distances over heaps of rough stones on all-fours, and up steep inclines.

You allow the Inspectors 24 days in the year for attending inquests. Now, it happens that the average number of these enquiries amounts to 30 a year, and the distances to be travelled are often very considerable, and the enquiry occasionally prolonged over two or more days: 100 days instead of 24 would have been more like the mark, and, indeed, I question whether that time would be adequate to the proper investigation of the causes of the several accidents.

As the question of the Cymmer Colliery explosion is one of considerable importance, I propose, with your permission, at a future time, to offer a few observations on the evidence adduced at the trial, and the scandalous defence of ignorance which was set up by the manager, who had the responsible charge and direction of the mine; and also to point out the necessity of some more stringent law, to compel colliery proprietors to use ordinary care in the protection of the lives of those employed under them.—*Seance, March 17.*

This all-destroying evil (the return air going directly on to the furnace fire) in coal mines, God knows, has sent its thousands unprepared into the eternal world, and their wives and families—dear creatures!—have been left unprotected and unprotected for a life of sorrow in this vale of tears. Since 1834, the time I left coal mining, I have never ceased, when opportunity offered, to point out this monstrous evil in the working and ventilation of coal mines.

A practical intelligent observer will have seen long ago that a few yards of battens boards neglected, a trap-door being left open, unscrewing the lamp top off, &c., have generally been found suitable and efficient *safeguards* to bear away the guilt of colliery proprietors and managers. The day of retribution will come. Then, immediately after an explosion, the public given to understand, almost by every newspaper throughout England, &c., that the mine where the calamity falls was considered in a most efficient

state of ventilation—indeed, "a model colliery"—aye, and no one is generally to blame but some unfortunate miner, who has by the calamity been ushered into the unseen world. A greater fallacy could not be published; the very reverse, in most cases, is the real fact. Then the inculcated mischief of such a statement, operating as it does in the prevention of a reformation, I know that editors of newspapers are not a class of men to be a party in publishing anything which might be detrimental to the poor miner, but their want of practical knowledge may, and I fear sometimes does, lead them into some mistakes, especially on this difficult question.

I tell the Government, colliery proprietors, managers of collieries, &c., that so long as the present unscientific method of ventilating coal mines exists, together with the present mode of inspecting mines, even so long will it be a waste of public money to have Inspectors of Mines. Yes, though their number were increased tenfold, and the general and special rules of collieries fortified, even then accidents, frequent, fearful, and appalling, must and will occur, and in the nature of things cannot be prevented.

Tell me of a coal mine, known to generate fire-damp, and that all the air employed to ventilate it is made, after it has done its work, to pass into an 8 or 9 foot road, and then return directly over the furnace, and I will tell you, fearless of contradiction, that, as sure as buds and blossoms are the foretellers of fruit, even so sure is such a method of ventilating mines the harbinger of death to the miners employed therein. Fray, of what earthly use is a safety-lamp in a coal mine ventilated as above described, although that safety-lamp should be most complete and perfect in all its arrangements, and though it were never tampered with by a miner? All such excellent arrangements and care would not, and could not, prevent the appalling catastrophes periodically occurring in the coal mines of this country.

See Mr. Sellar's manly and frank confession. All honour to such a man! "I should be afraid (says he) of the gas igniting at the furnace." Just so. If the gas or fire-damp will explode at a safety-lamp, or a naked candle, in only one part of a mine, what may we not expect when all the return air of such mine, charged with gas or fire-damp, is made to pass directly over a burning fire?

Can there be any wonder at the miners in that neighbourhood having signified their intention of leaving their employment, feeling as they do, unquestionably, their insecurity, and believing their lives to be in constant eminent jeopardy. Let us now hope and believe that, inasmuch as this body-destroying evil has now been made known to the public and Government, forthwith a remedy, plain, easy, and effective, will be adopted and put into operation in all the mines of this country with as little delay as possible. What, then, is the remedy proposed, as most certain in its application, to lessen and prevent colliery explosions? That remedy I have urged since 1834. I have repeatedly pressed it upon several Secretaries of State, Parliamentary Committees of Lords and Commons, and particularly and personally upon the late high-minded, honoured, and eminent Sir Henry De la Beche, in an interview I had with him in his room at the Museum of Practical Geology, Jernyn-street, London, on Tuesday, Nov. 8, 1853. Never shall I forget the kindness and sympathy expressed by that distinguished man on behalf of the mining population of this kingdom. He saw the plan I described, a plain, sensible, practical remedy. Would God he had lived! his very sudden death, last at the time when the present Colliery Act was contemplated, was a great national loss. Here, then, is the remedy to prevent future catastrophes in coal mines. Throw plenty of air into a mine—say, from 60,000 to 100,000 cubic feet per minute. I stay not to argue as to its mode of creation; I care not how, whether by bellows, steam-jet, or furnace, only let it be done and maintained, as I affirm it can. Then, let that air be properly split, or divided, into separate distinct winds, and distributed in this manner throughout every department of a mine. Then, let all that air, after doing its work of ventilation, be directed to pass, as it should do, and as it can be made to do, direct from the men and horses to the up-cast shaft, but in no case, and on no account, must it be allowed to ever come in contact with a fire, either in the shape of candle or furnace. I presume, of course, that all colliery proprietors will not lose sight of their duty in directing and providing proper sized up and down-cast shafts.

I will now add, in conclusion, that if these precautions are taken they will be followed by great positive pecuniary gain to all colliery owners, who generally suffer severely by explosions, and depend upon it we shall hear no more of such explosions as that at Lund Hill, which has indeed thrown a nation into deep lamentation and woe.

March 14.

P.S.—Allow me to call special attention to the following report of the last Parliamentary Committee on Accidents in Coal Mines, which was published in the Supplement of the *Mining Journal*, on July 8, 1854. It may not be known to most readers of your excellent journal that I was in correspondence with the said Committee during its sittings, forwarded them several papers on colliery accidents, and, by desire of the Chairman, Mr. E. J. Hutchins, M.P., I also forwarded to him a plan, showing the proper distribution of the air by separate distinct winds through mines, as the only rational thing ever likely to lessen and prevent fearful colliery explosions. On June 4, 1853, the Chairman, Mr. E. J. Hutchins, wrote me, and among other things said, "I agree in all that you have written; I think all your suggestions are very valuable." The said Committee then declared—Having well considered the evidence which has been published, your committee are of opinion that imperfect ventilation is the cause of the numerous accidents from fire-damp in this country, and that an abundant supply of pure air, properly distributed, must be considered as the great and effectual means of preventing explosions, and the consequent sacrifice of human life."

### TRAMROADS IN NEW COUNTRIES.

The best description of road for the transit of passengers and merchandise in thinly-populated countries, or in districts where the amount of travelling is not deemed sufficient to justify the construction of railways and the use of locomotive engines, is a question calling for the most careful consideration; and we, therefore, subjoin some data, which will, no doubt, prove interesting. The more important points involved are the cost of construction in the first instance, and the expense of working and maintenance afterwards. In comparing the tramroad system with common roads, the far greater facilities offered, both by the increased amount of merchandise and passengers carried, and the much shorter time required in the transit, with the application of the same animal power, by the tramway, is so apparent, that we presume no question would be raised upon their relative merits, but the comparison with ordinary railways has been more closely questioned. The experience of a railway 26 miles in length, and in a prosperous colony, where 10,000 square miles of surface require lines of communication, and the population scattered over it is less than 100,000, or, in other words, where there are about 10 persons to the square mile, is taken as an instance of the inutility of constructing expensive railways with locomotives. In this case, although the published returns showed a balance in favour of traffic of upwards of 325%, it was found upon investigation that no charge or provision was made for wear and replacement of engines, and other rolling stock. There were three engines then on the line, which cost 12,700*l.*, and by adding the interest that had accumulated, their actual cost was taken at 4500*l.* each. English experience has established that 36,000 miles is the average work an engine will perform; therefore, if one engine were to do all the work upon the line, it would be worn out in a year and a half, thus showing 3000*l.* per annum for replacement of engines, casual repairs, renewal of boiler-tubes and fire bars, with maintenance of the rest of the rolling stock, would be a still greater source of expense, and which estimated at another 3000*l.*, would give 6000*l.* as the annual cost of rolling stock.

The number of persons travelling on the line referred to does not exceed 60 each way, which has been taken as the basis of calculations. The number of trains daily are two each way, which calculated at 4s. 6d. per mile for haulage (the actual cost), the daily amount of that item will be 23*l.* 18s. The cost of the engine (4500*l.*), divided by the miles run (36,000), gives 2s. 6d. per mile travelled, or for the daily work (104 miles) 13*l.* The annual cost of keeping the engine in repair (1600*l.*), divided over the working days of the year, gives very nearly 5*l.* per day, and these items, added to the interest on prime cost of at least two engines at 10 per cent., 900*l.* per annum, or 2*l.* 17s. 8d., makes the daily cost of haulage 44*l.* 15s. 8d. Estimating the amount of revenue derived from the carriage of goods at one-half—the actual proportion being one-third—22*l.* 7s. 10d. is chargeable against passengers, which, divided by 200, the number travelling each day, gives 2s. 2d. as the cost of haulage for each passenger over the entire distance of 26 miles.

Instead of constructing more railways in the colony, as it is calculated that the population will be many generations before it will equal that of Scotland (92 to the square mile), it is proposed to lay down tramways with light long coaches, suitable for traction by one horse, and capable of accommodating 12 inside and 16 outside passengers; four each way would suffice for the above number of passengers; but to provide for occasional increase of numbers, and to afford greater accommodation by more frequent departures, calculations are based on six coaches daily each way. These coaches need not exceed 1 ton weight empty, when fully loaded 3 tons, while the medium load would be about 2 tons. Repeated experiments by the first engineers in England have established 8½*l.* as the power required to draw 1 ton on a level rail, and as the line is nearly level, the deviations from it being about the same either way, the force required to draw these coaches will vary between 17 and 25*l.* The numerous experiments of Mr. Telford on the Holyhead and Liverpool turnpike roads determined the performance of horses drawing stage coaches at the rate of 10 miles per hour to be 42*l.* per horse, consequently one horse with the proposed coaches would not be more than half loaded.

Short stages are considered preferable, making the horses work two of them daily. On this line there should be five—three intermediate, and those at the ends. Seven horses at each stage would be sufficient to work six each day. The first cost of these 35 horses, at 50*l.* each, would be 1850*l.* Allowing 5s. per day as the cost of each horse, including everything—the actual cost would be little over 3s. 6d.—there would be an expenditure of 8*l.* 15s.; ten horses must be renewed every year, 500*l.*; add interest on original stock, 185*l.*—885*l.*, or 2*l.* 4s. per day, making a total of 10*l.* 19s. per day, being a little more than 8½d. each passenger for the 26 miles, or less than one-third of that for locomotive traction. Of course, where the population is sufficiently dense, or where the goods traffic is of an extent to make locomotive traction remunerative, it would be infinitely superior; but there are many districts in which the construction of railways for locomotive traction would entail loss upon the shareholders.

Several companies have lately been formed for extending the means of railway communication in India, and it is now proposed to feed the several lines in course of construction, or shortly to be constructed, by the esta-

lishment of the North of India Tramroad Company (limited), by which a cheaper system of communication will be introduced throughout the provinces of Rohilund and adjacent territory, connecting the Ganges with the Indus, and also with the iron districts of Kumaon and Gurwal, viz. Puteyghur, Shahjehanpore, Bareilly, Rampoor, Moradabad, Meerut, Saharanpore, Umballah, Loodhiana, and Umritsir. It has been estimated that the cost of constructing the heaviest portion of the line will not exceed 5000*l.* per mile, and a large portion will not exceed half that amount, so that the capital which it is proposed to raise will be sufficient for the completion of the present section from Puteyghur to Delhi. It is intended ultimately to extend the tramroad system north-westerly by way of Meerut, Saharanpore, and Saharanpore to Umballah, and southward from Shahjehanpore via Lucknow to Benares. Animal power will be employed in the first instance, but, as the traffic increases, light locomotives may be used with a moderate speed. Thus an improved mode of transit will be immediately introduced in districts where the character of the population would not justify the application of locomotive power with any chance of the shareholders being remunerated; whilst, as the traffic increases, the locomotive system could be introduced and still admit of the shareholders reaping profits.

### MINING PARTNERSHIPS IN CORNWALL AND DEVON.

The want of harmony in the winding-up clauses of the Joint-Stock Companies Act, 1856, has induced a Letter to the Vice-Wardens of the Stannaries, on the *Winding-up Acts as affecting Mining Partnerships within the Stannaries of Cornwall and Devon*, by Mr. R. W. Childs. The writer remarks, and we think justly, that it was a general impression amongst those interested in western mining, whilst the Joint-Stock Companies Act was passing through Parliament, that winding-up of such undertakings would hereafter be placed under the jurisdiction of the Stannaries Court, and that it had been so provided by the clauses of the Act; when the clauses are examined, it will be seen that, although jurisdiction is given and proper machinery is provided for the purpose, their operation is limited to companies registered under the Act of 1856.

When it is considered that although an enormous capital is invested in the undertakings for raising these quantities of raw produce, yet a still larger capital is probably set in motion in the ultimate processes of smelting and rendering in a manufactured state and fit for the purposes of commerce, the ores thus raised with the Stannaries, he feels assured that the subject will be deemed one well worthy of consideration, and involving much that is of public and large outlays of money, and the raising of copper and other ores requiring large quantities of labour and coal, manufactured iron, ropes and chains, as also every form of ironwork, castings; and in addition, and above all, gives remunerative employment to a character to exercise and expand the facilities to a numerous and industrious population in a district which, but for its mineral wealth, would be to a great extent waste and unutilized. The coals required for the steam-engines are brought from the west in ships, which take back the ores for smelting; these again, in smelting, require vast quantities of coals, to raise the coals, and the pits require the same labour, more engines, more machinery, in short every process, from the raising of the ores from the mines, to their final export as manufactured articles, acts in the fresh springs of industry in an ever widening circle, and adds no mean quota to the total of national wealth and commercial greatness.

The undertakings by which these results are obtained, are fairly entitled to the recognition of and to such support as can be afforded by the Legislature, in enabling them to be conducted and managed under a cheap and expeditious jurisdiction, and to every one conversant with the subject, it will be found in the Stannaries Court over which you preside, the subject matter of whose jurisdiction is precisely these mining partnerships; and which, while recognising customs approved of by experience and forming the law of the Stannaries, has yet adapted its processes to the exigencies of modern times and the necessities of more extensive enterprise. By the Act of 1855, to amend and extend the jurisdiction of the Stannaries Court, the difficulties in the way of serving the process of the Court and enforcing its decrees of the jurisdiction were removed, the existing customary processes for enforcing payment of calls, the demands of creditors, and contribution amongst shareholders, were made more complete, effectual, and economical, the effective jurisdiction of the Court was extended to Devonshire, a short and simple means was provided for enabling creditors to ascertain the names of the partners liable to pay them, as also for shareholders to inspect and examine the books and accounts and lists of shareholders were imperiously withheld; and, in creditors' suits under the customary petition for sale of the materials, means were provided by which the Court can secure full payment to the creditors, and contribution for that purpose from all the shareholders liable to make the debts of the undertaking, according to their respective rateable proportions. The Act, with few exceptions, has laid down a uniform and equitable system of justice to all persons interested in such undertakings, whether as creditors or shareholders; it is also a Court both of law and equity, administered by the same judges. When, therefore, the Joint-Stock Companies Act, 1856, was introduced, it was believed that upon the principles on which that measure was based, mining partnerships within the Stannaries would therefore be permitted the benefit of having their affairs wound-up in the Court whose peculiar jurisdiction is directed to them, and that if there were any defects in the power of that Court to administer complete justice, the needed powers would be supplied. Such appears to have been through the intention of the Act of 1856, but unfortunately it is so worded that its beneficial tendency is limited to but few, if any, existing undertakings, and few, if any, likely hereafter to come into existence; leaving all others to the operation of the Winding-up Acts of 1848 and 1849, and thus rendering nearly nugatory a set of provisions directed to a very valuable object.

After referring to the provisions of the several clauses bearing upon the question, he states that this operates with peculiar hardship in the case of mining partnerships in Cornwall or Devon; for, in addition to every other disadvantage those partnerships are conducted on customary principles, and on a customary basis of justice, the Court of Chancery does not take judicial knowledge; and as it requires absolute and strict proof of the custom in all such cases, expenses, confusion, or individual hardship, are the inevitable alternatives. He alludes to the ruinous expense of winding-up in the Court of Chancery, and remarks that, as respects mines within the Stannaries, there is the consideration that the merchants who supply materials, and the labourers to whom debts may be owing, have a customary lien on, or hypothecation to, them, of the materials and engines upon the mines for their debts; and if their claims be unpaid, and, under the custom of the Stannaries, and the provisions of the Stannaries Act, in a petition, obtain an order for sale, and the proceeds of the sale produced divided amongst all creditors who shall come in and prove their claims; and by the last Stannaries Act, the registrar may, if the funds derived from the sale prove insufficient, proceed to apportion the balance of the debts, and make and enforce payment of a call on those liable to contribute. Winding-up in the Court of Chancery is thus either wholly unnecessary, or it deprives the merchants and creditors of their undoubted customary lien and hypothecation, and of the legal rights by virtue of which they could themselves get speedy payment of their claims. The objection that local courts have legal but not equitable jurisdiction does not apply to the Stannaries Court, which has both legal and equitable jurisdiction, and a right of appeal to the Lord Warden and two or more assessors, members of the Judicial Committee of the Privy Council, or Judges of the Court of Chancery, of courts of common law at Westminster; or, in cases under the Joint-Stock Companies Act, 1856, to the Court of Appeal in Chancery. In earlier days, in Cornwall especially, the local courts appear to have had exclusive jurisdiction; and the records of one of the ancient borough law courts, it appears that burgers were held for suit in the Court of Chancery, or in any other than their own court. Thus, a giving jurisdiction to the local courts, the Legislature has been, in effect, withdrawing jurisdiction from the superior courts, but is returning to the ancient constitution, and reverting to the normal condition of things which were encroached by the abolition of the Tudor and Stuart dynasties. In conclusion, we may observe that the whole letter proves the author's intimate acquaintance with the subject upon which he writes, and that much really useful information is contained in it, which will amply repay its perusal.

**NORTH YORKSHIRE AND CLEVELAND RAILWAY.**—The recent completion of this line is an important event, as opening up a new and extensive mineral district. It was celebrated by about 150 gentlemen dining together, under the presidency of Lord de Lisle (the Chairman of the company), and Mr. John Slater Post, of Stokesley, in the vice-chair. After some interesting remarks by Mr. Leeman, of the importance of the new line, not only as a feeder to the North-Eastern Railway, but as calculated to place the great iron trade of this country in their own immediate locality.—Mr. C. Barrett gave "Prosperity to the Iron Trade." Only one other day, he remarked this district was first opened out; yet the manufacture of iron had gone to an amazing extent, and he was informed that already the equatorial Cleveland iron had become so great as to show that it was highly thought of, not only on the continent of Europe. It was not too much to hope that, with the facilities now afforded, the trade would make such progress in Cleveland as to be rivalled.—Mr. Charles Cochrane said he believed Mr. Barrett had only pressed the general opinion of masters as to the quality of the Cleveland iron, and the probable extent to which it would be manufactured. He had great pleasure in responding on behalf of an interest so closely connected with the extension of the railway system and the development of their mineral resources; and, as an iron merchant of this district, he certainly hoped their stone might prove to be of a quality as to compete with the best of the world.—Mr. Vaughan, for whom there was a general call, as being the senior ironmaster of the district, said the fact of his interest being identified with the iron trade was a sufficient guarantee of his sincerity in wishing its welfare in all its branches. He had certainly no reason to regret the growth of the trade, for whilst his neighbours were becoming "thicker and thinner," he, on the common phrase, he did not find himself any poorer. It was difficult to look at these matters in any other than a selfish point of view, but he would confess to selfishness, or to a want of sympathy in the progress made by others. Their success was a very fair guarantee of his own. With plenty of mineral wealth and capital to work it up, he thought the trade was capable of almost any extent, and he was disposed to say "The more the merrier."—The present opening, commencing on the North-Eastern Railway at Plecton, extends to Stokesley. About 12 miles further, through the extensive ironstone royalties of Lord de Lisle, Mr. Tye, J. Slater Pratt, &c., will be opened in the autumn, and the line will proceed usually to its terminus at Grosmont, near Whitby, on the North-Eastern Railway and will open out the most valuable and extensive royalties of ironstone ever yet developed; and ere long the entire district will become a second Staffordshire.

**FROM BASSET CONSOLS.** Capt. J. W. Hunt (March 19) reports—Since our last meeting the mine is very much improved. We are stopping Used Hills level, east of the cross-course; lode 13 in. wide, ore throughout. The north lode, west of the cross-course, is 3 feet wide, producing good tin work, on which tributors are working. We are driving east from Hocking's shaft on a new lode that has been wrought on in the mine; lode 2½ ft. wide, producing fine stanniferous copper ore. We are also clearing the deep east level south on the lead ore. In order to intersect Wheel Sparrow lode, which has produced such large quantities of silver copper ore, our pitches on the lead lode are looking very well. Our prospects for silver copper ore are so encouraging.

••• TAPPING'S PRIZE ESSAY ON THE COST-BOOK SYSTEM, AND augmented, with Notes and an Appendix, can be had also *MINING JOURNAL* Office, 26, Fleet-street.—Price 5s.

• London: Simpkin, Marshall, and Co., Stationers' Hall-st.











**PENHAUGER.**—T. Grenfell, March 18: The engine-shaft is sunk 15 fms. 4 feet below edit; it retains its very favourable appearance; of the two, the lode contains more ore than was last reported on.

**PONTYWITH.**—M. Francis: We have been driven out of the bottom level by the water, and we cannot go any further without machinery. We have bought a small wheel, with rods, bolts, and pulleys, at East Frongoch; and we intend, unless you can better plan, to erect it, and take out the water, and go on with the trial.

**ROSEWARNE AND HERLAND UNITED.**—S. Mitchell, March 18: The winze sinking below the 8, east of the engine-shaft, is down nearly 4 fathoms; for the last 4 feet the lode has been disordered by a floor of spar, which we are now through, and find that the lode retains its former appearance, yielding excellent work for tin. The 5 is driven 15 fathoms east of this winze, in which the lode has improved in the last 3 or 4 fathoms. The rise in back of the 8, west of the engine-shaft, is producing good work. In the 15 we are still driving on the copper lode; 3 to 6 in. is saving work.

**SITHNEY WHEAL BULLER.**—In the south shaft, sinking on Schneider's lode, under the 60, the lode is worth 117, per fm. In the rise in the back of the 50, on Schneider's lode, there is a good lode for tin, worth 167, per fm. In the 60, east from south shaft, the lode is producing rich stones of tin, driven 4 ft. 3 in. The cross-cut south from the engine-shaft in the 90 has been driven 4 ft. 9 in., and the 3 ft. 6 in. In the 50 east of cross-cut, on the new lode, the lode is 1 ft. wide, producing stones of tin of rich quality, driven 5 ft. 9 in.

**SORTBRIDGE CONSOLS.**—J. Richards, March 19: Hiltch's Engine-Shaft: In the 60 east the lode is 2½ feet wide, composed of capel and a little ore. In the 62 west the driving is still under the lode; no lode has, therefore, been taken down. In the 50 east the lode is worth 2 tons of ore per fathom. In the stopes in the back of the 50 east, west of Bryan's, the lode is not so good, being at present only worth 1 ton of ore per fathom. In Edward's stopes, in the back of the 50 west, the lode is worth 1½ ton of ore per fathom. There is no other alteration.

**SOUTH BEDFORD CONSOLS.**—J. Phillips, March 19: The lode in the 62, east of Red Whim shaft, is looking just the same as reported last week: in the 60, east of the lode is from 4 to 5 feet wide, and still producing 2 tons of ore per fm. The lode in the 40 west is 2 feet wide, worth from 1 to 2 tons of ore per fm. The lode in Gullet's shaft is 3 feet wide, producing good saving work. The stopes in the bottom of the 30, west of this shaft, are worth 1½ ton of ore per fm. In the back of the same level, the stopes are worth 1½ ton of ore per fm.

**SOUTH BOG.**—S. Morris, March 19: The stopes below the 23, and backs of the deep adit north of winze, is worth 77, per fm. for lead. The stopes south of winze, in back of the deep adit, is worth 107, per fathom. We have been the last three days clearing the mine of the greatest broken in the last month's workings, and shall complete this to-day, when I shall put four or six men to get the shaft in readiness, and begin the pit-work. We shall commence the building of the engine-house the beginning of next week, when there shall be no time lost in getting it completed, and the engine set to work. We are progressing in our dressing operations, and trust to have from 7 to 8 tons of lead ready for market by the beginning of the next month. All other operations at the mine are satisfactory, and the time is not far distant when this mine will come out to the surprise of many.

**SOUTH BULLER AND WEST PENRTHRAL.**—G. Reynolds, March 14: We are driving the north cross-cut with all speed by six men, at 50s. per fm. to cut the north lode, which is about 50 fms. north of the present cross-cut.

**SOUTH DEVON CONSOLS.**—J. Cook, March 16: In the end driving west in the 30 the ground is rather hard; the lode looks promising, it is still split, but the parts appear to be coming together, and shows indications which lead us to expect a gradual improvement. In the 20, east of the 30, the lode is still split, but the parts appear to be coming together, and shows indications which lead us to expect a gradual improvement. In the 20, east of the 30, the lode is still split, but the parts appear to be coming together, and shows indications which lead us to expect a gradual improvement.

**SOUTH DOLCOATH AND CARNARTHEN CONSOLS.**—W. Roberts, March 17: The 70 and 40 fms. levels were progressing satisfactorily. In three or four months more we expect to get near the ore ground driven through in the 50 fms. level.

**ST. AUSTELL CONSOLS.**—R. H. Williams, March 14: In the 35 fms. level cross-cut we have been engaged the early part of this week securing and timbering the end; we have cut through the western part of the lode, and also cut the elvan course. The eastern part of the lode we have not yet cut through; where we have cut this lode is on the point of a heave, and until we get off from this heave a fathom or two, I am not in a position to give you its probable value for tin. The lode appears to be from 9 to 12 ft. wide, and is running by the side of the elvan course, and is, no doubt, the main part of the stopes lode going the way back to Strawberry Mine, south of our working at Young's shaft; this lode, in all probability, is standing from where we have cut it to the surface, and will make the main lode in depth. I have brought up to-day some rich samples of tinstuff from the end going east; this end is furthest from the slide, and shows every indication of improvement as we go off from the heave; we shall now drive east and west, and also south, as there is another lode on the south side of the elvan course, about 8 or 9 fms. from our present end; owing to this lode some few south, however, we are going to put in a machine to do this, which will enable us to take away this lode as it is exposed to the surface, and to the extent of discovery for this mine, and have every reason to expect large quantities of tin will be found both east and west of this cross-cut. Our stopes in the 25, on old lode, is looking encouraging, and also in the 15. Our tribute department is much as usual. Our engine-shaft is down 7 fms. 3 ft. under the plat in the 25. Next month we shall prepare to drive south from the 40. I hope to be able to give you more particulars about this lode next week; we are driving to cut it in the 25, as it is not the same part of the lode we have had at this level for so long a time past.

**TAVY CONSOLS.**—R. Williams, March 18: We have cleared and secured the 80 east and resumed the driving by six men, at 77, per fm., and shall push it on as fast as possible eastwards. The stopes in the 40 are worth 4 tons of ore per fm. In the 30, that in the back of the same is not so productive as at the date of my last. The stopes in the back of the 36 west is worth 5 tons of ore per fm. and looks well. The rise in the back of the 36 west, on the cross-course, is proceeding in a satisfactory manner. No alteration in any other part of the mine.

**TINCROFT.**—W. Teague, J. Andrew, J. Cook, March 17: At North Tincroft, in the 154 fms. level, driving west of new engine shaft, the lode is 2 ft. wide, at present poor: in the 154, driving east of shaft, the lode is 2½ ft. wide, producing a small quantity of tin. In the 142 fms. level, driving west of shaft, the lode is 2 ft. wide, occasionally producing good stones of ore; in the 142, driving east of shaft, the lode is still in a disordered state, being mixed up with the cross-course. In the 90 fms. level, driving east of shaft, the lode is 2 ft. wide, worth 55, per fm. for tin. On the 80 fms. level, driving east of shaft, the lode is 2 ft. wide, worth 55, per fm. for tin. On the 80 fms. level, driving east of shaft, the lode is 2 ft. wide, worth 55, per fm. for tin. On the 80 fms. level, driving east of shaft, the lode is 2 ft. wide, worth 55, per fm. for tin.

**TRELEIGH CONSOLS.**—John Priner, March 14: The ground in the 50 cross-cut, extending north from Carr's shaft, is hard and wet. We have commenced opening west on Good Fortune lode in this level, and I am glad to say it is looking better. We have no doubt of reaching a good lode when the end is driven in a line with the ore gone down in the 40. Shanger lode in the 40, east of the cross-cut, is about 1 ft. wide, consisting of hard quartz, with a small quantity of copper and blende ores; the lode in the 40 west is 3½ ft. wide, producing stones of ore, and presenting a very promising appearance.

**TRETOIL.**—R. Rich, March 19: There is a great improvement in the shallow level west, a portion only of the lode (about 4 ft.) is being driven on, which is composed of spar, peach, and tin, producing, for this width, 3 cwt. of black tin per 100 sacks; the greater portion of the lode is still stult. In the middle level west the lode is now being cross-cut, the level having been driven by the side of the lode; the cross-cut has been driven on the lode 10 ft., the last 4 ft. has produced good work; the south wall of the lode has not yet been reached; I think it probable the south part of the lode will be found the most productive part. About 100 fms. south of our present workings, and 20 fms. only south of our adit end, we have discovered a new tin lode which has been worked extensively in the bottom of the 50 fms. level; we have yet got to the bottom of these old workings. From what we can see in the western end of the workings it is a large lode of great promise. I hope in about a week to give you further particulars. I have great pleasure in stating that the mine has greatly improved during the last fortnight.

**TREVONE CONSOLS.**—T. M. Penalana, March 16: Having been in the neighbourhood of this mine I have looked carefully into it, and beg to state my remarks thereon. The 25 fms. level is going 25 fms.; in the 25 they have cut a caunter lode, the leader of which is 9 in. wide, of solid copper of rich quality, about 1 ft. from it or nearly in the middle of the lode is a solid leader of lead 2 in. wide, a winze has been sunk 6 fms. under this level, where there is a good course of ore in each end, 9 fms. has been driven on the lode in the 25, and the lode is worth 2 tons of ore per fathom; a reserve of 1200f. worth of mineral. In driving the 25 north a few fms. it will intersect the great copper lode, and as the lode in this end is still improving at the junction, good results may be expected. The 10 is driven 25 fms. on the course of the lode, which is ore throughout; a winze should at once be sunk on this lode, not only to set tribute piles, but to prove its bearing and underlay, as it is not seen in the bottom level; 200 fms. north is a copper lode 4 ft. wide, good work: a ton of copper ore could be taken down with one blast at the least, but nothing has been done on it by the Trevone Mining Company. In the new cross-cut two lodes have been intersected, one at the commencement of the close drainage, which is 5 ft. wide, composed of prlan, soft spar and mundle, with good stones of copper ore; a few fms. in the cross-cut another lode is gone through, carrying a leader of grey copper ore, about 1 in. wide, this cross-cut is intended to cut all the other lodes at a good depth, and to all appearance it will intersect them near the junction, as they appear to be coming together in going to the hill. Tom's engine-shaft is going on with sinking, the incline-plane is cut over the cliff, and the tram is in course of fixing, the dressing-floors are finished, the smith's shop, changing-house for the men, and office are completed; all the work named herein has been done since August last, and in one month from this day a good sampling can be made.

**TREWTHIA.**—T. Richards, W. Rowe, March 17: The 70 cross-cut is extended towards the 70 fms. In the 60, north from the engine-shaft, the lode is worth 77, per fathom. In the south end we have intersected a slide, which has for the present disordered the lode. The 50 north is worth 47, per fathom. The 40 north is much as last reported, producing some saving work. Some of the stopes are not quite so productive; however, on the whole, they are producing tolerably well. Two parcels of ore sold on Thursday last, 40 tons to the executors of J. T. Treffry Esq., at 28s. 14s. 6s. per ton, and also 33 tons to Messrs. R. Mitchell and Son, at 12s. 15s. 6s. per ton.

**UNITED MINES.**—Underground operations are suspended here until the position and prospects of this mine have been fully examined and reported on, and the future course of working arranged.

**VALE OF TOWY.**—S. Thomas, T. Harvey, S. Harper, March 17: At Clay's engine-shaft, in the 50 fms. level north the lode is 4½ ft. wide, producing 10 cwt. of lead per fm. In the same level south the lode is 2½ ft. wide, unproductive. We have holed the rise to the winze in the back of the 40 south of Bonville's shaft. In the same level, north of Bonville's shaft, the lode is 3 ft. wide, producing 8 cwt. of lead per fm.; in the same level, south of Field's shaft, the lode is 4 ft. wide, composed of barytes, kyllas, and gossan, with spots of lead. In the 30, north of Bonville's, the lode is 2 ft. wide, producing about 4 cwt. of lead per fm. In the winze in the bottom of the said level the lode is 2½ ft. wide, producing 5 cwt. of lead per fm. In the 20, driving east from Bonville and Clay's shafts, the lode is about 3 ft. wide, with spots of lead in each.

**WEST ALFRED CONSOLS.**—S. Lean, R. Stevens, March 19: We have commenced cutting into the lode in the 85, east of flat-rod shaft, as far as we have seen it looks promising, but not rich. The lode in the west end in this level is 4½ feet wide, containing stones of copper ore, and looks very promising. The lode in the 75 west has been disordered by a horse of kyllas, but is now more settled, and there is every prospect of an improvement, as the ore in the level above is dipping west; the lode in the present end is worth 67, per fathom. The lode in the 65 west has not been taken down since our last report, which then produced 1½ ton of ore per fathom. The stopes in the back of this level are worth 157, per fathom. The stopes in the back of the same level, east of No. 1 winze, are worth 107, per fathom. The stopes in the bottom of this level, west of Elie's winze, are worth 137, per fathom.

**WEST BASSET.**—W. Roberts, March 17: The shaftmen will get prepared to sink under the 114 fms. level by the end of this week. In the 114 east the lode is 4 ft. wide, producing 2 tons of ore per fm. The 104 east produces 1 ton, lode 3 ft. wide. In the winze sinking under the 91, west of engine-shaft, the lode is 4 ft. wide, very kindly, with good stones of ore. Other parts are without alteration. The stopes and pitches continue to look well.

**WEST COLLACOMBE.**—Henry Rodda, March 19: At the eastern engine-shaft the ground is rather hard and slow of progress owing to the coming in of some floors of spar, &c., the lode in which is very regular and well-defined, and is full 3 ft. wide, of the same general and promising character as when last reported on; the stratum is a light blue kyllas, and is highly mineralised, showing some small branches and faces of rich copper ore. There is no alteration in any other part of the mine worthy notice.

**WEST NANTY MWYN.**—J. Thomas, March 19: Everything is going on satisfactorily. We are getting on fast with the driving of the adit, and I consider that in another 5 fms. we shall cut the large Comet lode, with 20 tons backs; this lode is 12 ft. wide on the surface, and we may expect good results.

**WEST ROSEWARNE UNITED.**—W. Richards, March 13: The engine-shaft is being sunk by two men, at 24s. per fm., in the country, south of the lode. Driving the 30 west by two men, at 24s. per fm.; lode 2 ft. wide, composed of spar, and mundle. Driving the 30 east by two men, at 24s. per fm.; lode 2 ft. wide—poor. Driving the adit east by two men, at 24s. per fm.; the lode here contains branches of tin. We have set to drive south to intersect the flookan. We are clearing the adit level north, to prove the north part of the set, having it in contemplation to cross-cut near the cross-course when the level is sufficiently cleared.

**WEST SHARP TOR.**—Wm. Richards, March 16: We met with a floor of hard quartz and capel in the win shaft during the past week, which impedes the progress a little; we hope, however, that it will be of short duration. There is no change to note in any other point of operation since last reported on.

**WHEAL AGAR.**—W. Roberts, March 17: The sinking of the engine-shaft under the 60 is progressing favourably. In the 60, west of engine-shaft, the lode is 1 foot wide, kindly, with stones of ore. In the 50, east of engine-shaft, the lode is 1 foot wide, producing good stones of ore. In the 40, east of Winstow shaft, the lode is 1½ ft. wide, and unproductive. In the same level, west of ditto, the lode is 2 feet wide, with stones of ore. In the winze sinking under the 30 fathom level the lode is 2 feet wide, worth 1 ton of ore per fathom.

**WHEAL ARTHUR.**—T. Carpenter, March 16: Old Lode: The lode in the 40 east below edit is 3 ft. wide, composed of spar, capel, mundle, peach, and tin. The lode in Palmer's stopes, in back of the 20 east below edit, is 7 ft. wide, worth 127, per fm. for tin. The lode in Hoskins's stopes, in back of the 10 east below edit, is 4 ft. wide, worth 87, per fm. for tin. Watson's Lode: The lode in Wilton's stopes, in back of the 30, west from surface, is 4 ft. wide, yielding good stamps' work for tin. North Lode: There is no alteration in the 10 and 20 levels west, below edit, since last report. South shaft: The lode in the 20 east is very promising for producing tin of a shallow depth. We are sinking the shaft on the north part of the lode, which is 12 ft. wide, composed of spar, prlan, mundle, and peach, with spots of black and yellow copper ore. We sampled 3 tons of good-quality tin on the 14th inst.

**WHEAL EDWARD.**—M. H. East, March 14: North Lode: In the 64 east we are driving by the side of the lode. In the 64 west we have met with a large vugh on the lode, and there is every appearance of an improvement being met with very shortly. The lode in Bickle's winze, sinking below the 54 east, is worth 457, per fm. The lode in the stopes in back of the 54 is worth 127, per fm. In the 54 west we continue to drive on the south part of the lode, which is worth from 127 to 147, per fm. The lode in Terrell's winze sinking below the 41 west is worth 257, per fm.—South Lode: We have commenced cutting through the lode in the engine-shaft, and have broken some very good stones of ore.

**WHEAL EMMA.**—Wm. Goldsworthy, March 18: The engine-shaft is now down 10 fms. below the 22; the lode is 3½ ft. wide. The branch on the hanging wall is still producing good stones of yellow ore. The 22 end has been driven during the last week about 4 fms. through a fine bunch of ore, varying from 20 to 40 fms.; the ore part of the lode is 2½ ft. wide, composed of quartz, sugary spar, prlan, and mundle, with rich grey, black, yellow, and malleable ore. The principal portion of water in the mine is coming from the bottom of this end, and the ground is still favourable for driving. The lode in the 10 end is still producing stones of ore; the lode is 2 feet wide, composed of floor-spar, gossan, and mundle, with yellow and black ore, having a strong capel on both sides rather sparingly. The winze-shaft has not made much progress, owing to the delay caused by the floods. The tribute department is looking well, and the men on an average are getting good wages. We weighed, on the floors last Thursday, 63 tons of dry ore, which we are now carting to Totnes ready for sampling.

**WHEAL GRENVILLE.**—G. R. Odgers, March 14: We are progressing with the different bargains as fast as possible, but there is no material alteration to report on since my last advice. In Newton engine-shaft no lode has been taken down this week.

**WHEAL HARRIETT.**—S. Williams, March 14: The 90 cross-cut, north from engine-shaft, is without any material change. In the 90 cross-cut south we have driven through another branch, 6 in. wide, producing very good stones of tin and copper ore. The lode in the 74 east end is about 1 foot wide, producing stones of tin and copper ore. The lode in the 74, west end, is 1½ foot wide, and is producing 1 ton of ore per fm. The lode in the 74, east end, is 2 ft. wide, and is producing 2 tons of ore per fm. The lode in the 74, west end, is 2 ft. wide, and is producing 2 tons of ore per fm. The lode in the 74, east end, is 2 ft. wide, and is producing 2 tons of ore per fm.

**WHEAL HENDER.**—W. Blewitt, March 15: Rosewarne lode is 18 in. wide, composed of prlan, spar, and mundle; from the appearance of the ground at present we fully believe that it will soon be improved; this lode has been very productive a little to the west. I think the speculation in driving east is a good one, and we shall intersect some other lodes. South lode end is suspended at present in order to communicate a shaft, after which communication we shall be in a position to raise a fair quantity of ore.

**WHEAL KITTY (St. Agnes).**—W. Thomas, March 14: Engine-shaft: In sinking under the 100 fms. level, the lode is 2 ft. wide, and is producing 2 tons of ore per fm. The lode in the 100 fms. level, driving east of shaft, the lode is 2 ft. wide, and is producing 2 tons of ore per fm. The lode in the 100 fms. level, driving east of shaft, the lode is 2 ft. wide, and is producing 2 tons of ore per fm. The lode in the 100 fms. level, driving east of shaft, the lode is 2 ft. wide, and is producing 2 tons of ore per fm. The lode in the 100 fms. level, driving east of shaft, the lode is 2 ft. wide, and is producing 2 tons of ore per fm.

**WHEAL LOPES.**—J. Phillips, March 12: The second lift is now down upon stuff which undoubtedly ran in from the collar of the shaft, this stuff, in my opinion, is resting upon some pieces of timber that may be lying across the shaft a few fms. below the point of the lift; this chokage has retarded our progress considerably since the obstruction. The shaftmen have cut bearer-holes and fixed screws so as to drop away the lift gradually with them, as we clear up the stuff which is being drawn to surface with the capstan, and no time will be lost in getting down to the 30 and fixing the 17-in. plunger-lift. As soon as the water is forced down to the back of this level I should suggest that the engine be put to the 8-ft. stroke, so as to save time in forcing up the water which is collected in this level. With regard to the prospects of the concern I beg to refer you to my former reports, as I see no reason to alter them.

**WHEAL MAUDLIN.**—W. Tregay, March 14: The water in the engine-shaft, which had risen above the 30 fms. level, is now got below it, forking fast, the present rains being in our favour. In the 20 end we have got through cross-course, which, with the additional limbs passed through this week, is 6 ft. wide; as soon as we get well into the kyllas on the east we shall drive south after the lode. Since cutting this cross-course, letting out so much water, I should very much like to see the bottom level, driven east through it; it would appear that the cross-course in the 38 east, if connected with this in the 20, can only be a part of it, the bottom end letting out very little water in comparison. Copper ore is much more likely to be found around this than the comparatively dry branches which have hitherto crossed us, and as whatever ore is found here will mostly be met with in irregular masses, whether large or small, we might not see many more indications, before cutting suddenly into it, than are here now. Every possible endeavour will be made to get out the water and push on the bottom end accordingly. In the shallow adit, on the south branch, there is nothing important to report, not having yet reached the point aimed at, as noticed in my last report.

**WHEAL NORRIS.**—J. Nance, March 16: We have intersected a lode in the north cross-cut, and have driven on its course 8 feet; it is 18 in. wide, composed of peach and prlan, containing a little tin, with particles of grey copper ore intermixed, and no doubt it would be found productive of copper, if explored in depth. We have not yet reached the No. 8 lode in the south cross-cut, but are expecting to cut it every day. The No. 8 lode shows a very kindly back, and the underlie must be very little indeed, otherwise we should have cut it before now.

**WHEAL POLLARD.**—J. Nance, March 13: We have extended the 55 cross cut 4½ fms. north, but we have not yet reached the No. 4 lode, the distance being greater than we expected; but judging from the indications in the present end of the cross-cut we think we are very near the lode.

**WHEAL ROBINS.**—J. Nance, March 13: We have now extended on the course of the lode in the 12, 1½ fms. west, and 9½ fms. west; the lode still continues to yield a little rich copper ore. The ends have not yet been driven far enough to come under the ore ground in the 30 and 40 fms. levels.

**WHEAL TEHDY.**—D. Lankbury, March 17: In the 90, driving west from the diagonal-shaft, the lode is 2 ft. wide, composed of spar and stones of ore, and letting out plenty of water. In the 80, driving west, the lode is 2 ft. wide, and worth 307, per fm. for ore. In the 80, 70, and 60 levels, driving west, little alteration has taken place for the last week. In the 50, east on the caunter, the lode is 1 ft. wide, producing stones of ore. The 60, driving south from engine-shaft, is set to four men, at 137, per fm. A communication has been made from the winze sinking under the 30, east from the western shaft, to the 80, west from diagonal-shaft, which was partly sunk about a month since and suspended in consequence of the water. We think to sample about 50 tons of ore next week.

**WHEAL THOMAS.**—T. Hooper, March 16: On Friday last we cut the lode in the 22 at the west shaft; most of the time since has been employed by the men in squaring up the end and preparing for driving east and west on the course of the lode, it is composed of lead and quartz; the leader is, as far as we can see it, about 3 or 4 in. wide, some parts of which are very rich, but it will require a few days more to bring it into a condition to give a correct estimate of its value. I brought up this afternoon some very rich specimens of lead taken from the lode whilst I was working, and it was containing equally good when I left. That part of the engine-shaft we have commenced sinking under the 26 on the course of the lode; operations here being yet limited I defer reporting thereon until next week.

**WHEAL TRELAUNY.**—W. Bryant, W. Jenkin, March 19: Smith's engine-shaft is sunk 6 fms. 3 ft. below the 132. In the 132 north the lode is 4 ft. wide, and worth 117, per fm.; in the same level south it is 4 ft. wide, and worth 107, per fm. In the 120 north it is 2 ft. wide, worth 67, per fm. In the 108, north of Chippendale's, the lode is 2 ft. wide, worth 127, per fm. In the winze sinking in the bottom of the 108, south of Chippendale's, the lode is 2 ft. wide, worth 127, per fm. The cross-cut in the 98, north of Chippendale's, is extended west 4 fms., worth 77, per fm.; in the same level north it is 3 ft. wide, producing a little ore. In the 130 south it is 2 ft. wide, worth 137, per fm.; in same level north it is 2 ft. wide, producing stones of ore. The stopes and pitches are producing much as usual. We sampled on Saturday last two parcels of lead ore—viz., No. 1, computed 85 tons, and No. 2, computed 45 tons, for sale on the 21st inst.

**WHEAL TREVELYAN.**—J. D. Osborn, B. Gundry, March 14: Watson's engine-shaft is sunk 5 feet below the 40, and the ground favourable for sinking. The cross-cut driving south from Watson's, in the 40, is driven 3 fms. 3 feet. The 40, driving east of Watson's, on Park lode, is driven about 6 fms., and we hope in a few fathoms more driving to get under the run of ore ground in the 30, when we stand on the level of the old men by means of shallow workings on the backs. A lode a few fms. to the north of that which has produced such large amounts of tin in the Wheal Lewis set was formerly wrought to the depth of 40 fms., and is said to have yielded copper ore to the value of several thousand pounds. The workings on the lode from which the principal portion of the tin returned from Wheal Lewis has been obtained have been extended for a short distance into the Wheal Wagstaff ground, and it consequently follows that the holding of the present boundary shaft now in course of sinking, the mine will be drawn to that depth by means of the Wheal Lewis engine. On inspecting the Wheal Lewis Mine, and the attention was particularly to the eastern boundary of the set, I found that the 70 was not clear back to the boundary, as some of the stuff had gotten away and filled the end with water. The 60, on the contrary, I found to be clear, and to have been extended some 3 or 4 fms. into the Wheal Wagstaff set, but the stoping of the backs appears to go no further than the boundary of the Wheal Lewis ground. The lode in Wheal Lewis Mine is generally small, varying from 2 to 3 in. to 1 ft. in width, but the principal yield of tin was from flats or floors branching off from the veins and frequently yielding black tin in an almost pure state. From the width of the gossan carried, these flats must in many places have extended for considerable distances in the country. A sample taken at a point possible from the end of ground standing in the 60 was found on being tried to afford 5 to 4-10th cwt. of tin to the 100 sacks. In the 50 the end has been again driven into Wheal Wagstaff property for a short distance, but is much encumbered with rubble and rubbish. From what I have been enabled to learn from my inspection of the Wheal Lewis Mine, and the general characteristics of the neighbourhood, I regard the Wheal Wagstaff as a very promising speculation. The lode within the Lewis boundary has evidently been exceedingly productive, whilst the end of the ground of the Lewis Mine is a very promising prospect. A cross-course intersects this ground about 30 fms. west of the Wheal Lewis boundary, and in the neighbourhood of this we have every reason to expect important deposits of tin.

**WHEAL UNITY.**—J. Vivian, March 16: In the 19, west of engine-shaft, the lode is 2 feet wide, and opening tribute road; in the same level east, the lode is 2 feet wide, worth from 87 to 107, per fm. for copper ore. In the 10 east the lode is 2 feet wide, and producing a little copper ore. In the adit driving south we have intersected the south lode, which is about 18 in. wide, composed of gossan, spar, lead and a little copper ore. We have set to drive east on this lode.

**WHEAL ZION.**—J. T. Phillips, March 18: The ground in the 80 cross-cut north is rather hard for driving, mixed with spar, and letting out more water than before. In the 65 east we have not yet cut the south part of the lode. In the 50 east the winze is being sunk on the flookan, carrying about 2½ feet of the north part of the lode, which is a very promising character; the end is driven 15 fms. beyond this winze on the north part of the lode. As soon as we have improved the ventilation by opening a communication with the 65, we intend cross-cutting to the south part of the lode; the air is insufficient for two pairs of men to work at the same time.

**WILLOW BANK.**—J. Sanders, March 16: The lode in the eastern engine-shaft is about 3 ft. wide, composed principally of spar, and light blue slate, with spots of lead ore occasionally, and strongly impregnated with copper. The cross-cut, from the 17 east, is extended about 6 feet from the south side of the level; the part of the lode which it has passed through is very hard, and spotted with lead ore. The 17 west is not letting out so much water as formerly, and poor at present. The boundary shaft is progressing favourably some part of which will stand without timber. The ground in the adit level is very favourable for driving at present, which is a very promising feature, as the adit will be communicated with the shaft in less time, and for less money than was anticipated at the commencement.

**WOOD MINE.**—S. Cock, March 13: The men have sunk 2 fms., and commence to-day to cross-cut east and west by six men, and two labourers to haul the stuff. There are now in the bottom of the shaft two branches, about 2 ft. apart—the western one is 5 in. wide, composed of quartz, jack, mundle, capel, iron, and spotted with lead. The eastern branch is composed of flookan, quartz, and iron, about 3 in. wide. This is all the lode we shall have within 6 ft. east or west of the shaft. The 14 end north is driving by two men, at 77, 10s. per fm., sent 1 fm. or the month. The clearing of the adit level south of New House bottom is suspended. The lode in this end is 2 ft. wide, composed of flookan, quartz, and mundle—a very kindly lode as seen in the level in cutting ground for timber, but not cleared as far as where the old men left off.

**WREY CONSOLS.**—W. Williams, March 19: The shaft spoken of in the last report is for the present suspended, and we have commenced driving the adit level, and have about 8 fathoms to drive to get under the shaft; as this level progresses, on east on the course of the lode, we may expect in a short time to see good results, judging from the character of the lode seen at the shaft.

**AUSTRALIA.**—It is computed that the *Austral* has now been at sea 86 days, the *White Star* 81 days, the *Orwell* 81 days, and the *Angley* 79 days, assuming that these vessels, all of which are homeward bound, left Melbourne at the dates previously fixed. It was expected that the shipments of gold by these vessels would represent a considerable aggregate.

**ANOTHER BURRA BURRA!**—Every one knows the story of the Burra Burra Mine, which, with a paid-up capital of £12,300, has paid in dividends to its fortunate shareholders, from a working of seven years only, no less a sum than £31,375, and is now going on at the rate of 86,554, profit half-yearly—everybody, we say, knows this, but who would have thought the land, of which the Burra Burra Mine forms the southern portion, should have been left to be idle and unproductive, because, forsooth, it belonged to two agricultural companies, the Scottish Australian Investment Company, and the North British Australian Company? However, at last the attention of some parties connected with the companies have been drawn to the subject by overtures from practical miners on the spot addressed to the manager, proposing to lease the estate at a considerable money rent, and a royalty of one-fifth of all the ore raised, a number of gentlemen connected with both companies, and several merchants in the Australian trade, have united to purchase the property in question, and to work out its mineral wealth, with a capital of 75,000, in 12 shares, a deposit of 10s. being paid on allotment. The property is known as the "Bon Accord," and comprises 347 acres. There is no boundary whatever between it and the Burra Burra. The Bon Accord property is situated on the north side of the Burra Burra. The shaft known as "Beck's shaft" of that mine, from which much of the richest ore of the Burra Burra was taken, is distant only about 145 yards from the southern extremity of the Bon Accord, so closely contiguous are the two properties; indeed, they may be most accurately described as together forming a continuous tract of land. In the south part the famous mine referred to is in full and productive operation, while the north part constitutes the Bon Accord property. The lodes or ore-bearing courses of the Burra Burra, as is well known, traverses that property in the direction from south to north—the dip of the ore is stated by practical miners employed there, to be towards the south. Nor is this all, the 75,000, will not only purchase a mine, but an estate, and not only an estate but a township, which, *faute de mieux*, may, by the money being spent in its vicinity, be ultimately worth all the mines put together. Considerable portions of the Bon Accord property are valuable for agricultural and other purposes besides mining. A township called Aberdeen, and extending over 40 acres, was several years ago laid out upon the property, and a certain number of allotments for building purposes, amounting together to about 10 acres, more or less, have been disposed of. There is now a rapidly increasing population connected with the large mineral establishments located in the immediate vicinity of the property, and a revenue of considerable importance may hereafter be reasonably looked for from the remaining allotments in the township, particularly as it is believed that by a little exertion the main road in the district may, with public advantage, be altered and made to pass through the centre of it. Such are the prospects of the Bon Accord Copper Mining Company (limited). They have a first-rate business direction, and are in connection with some of the first houses in the city.—*Morning Chronicle*.

**THE "BLACK SAND" OF AUSTRALIA.**—Part of the specimen of "black sand" brought by Mr. Tolmer from near Kingscote, Kangaroo Island, having been submitted to Mr. Parkinson for analysis, he states positively that it is not an ore of tin, but adds, "as there are several elements variously coloured with iron in combination with other metals, I could not say what the sand is, further than that it belongs to the siliceous class, and is found in volcanic rocks, associated with most of the precious metals."—*Adelaide Observer*, Nov. 22.

**MADAME TUSSEAU'S EXHIBITION.**—A highly interesting portrait model of Viscount Palmerston, K.G., has been placed in the great room of this establishment. The Noble Premier is represented in the usual court dress of a Minister of the Crown—the costume complete, splendidly embroidered with gold, and decorated with the most noble order of the Garter.







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**THE PROGRESS OF MINING IN 1855.**  
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**CORNISH AND DEVON MINING ENTERPRISE.**  
By R. TRIDENICK, Gresham House, Old Broad-street, London.  
In this publication Facts and Reliable Statistics are recorded; a History of the chief Dividend and Progressive Mines is clearly given; and all interested in mining adventure should possess a copy. The Second Edition will be published on the 1st day of May next, revised.

**BUDGE'S MINER'S GUIDE IMPROVED.**  
New Edition, corrected and enlarged, 8vo., with Portrait, 12s., cloth.  
**THE PRACTICAL MINER'S GUIDE;** comprising a Set of Trigonometrical Tables adapted to all the purposes of Oblique or Diagonal, Vertical, Horizontal, and Traverse Sighting; with their application to the Dial, Exercise of Drifts, Lodes, Sides, Levelling, Inaccessible Distances, Heights, &c. By J. BUDGE.  
London: Longman, Brown, and Co.

Just published, 1857, a  
**LETTER TO THE VICE-WARDEN OF THE STANNARIES,**  
ON THE CHANCERY WINDING-UP ACTS,  
As affecting Mining Partnerships within the Stannaries of Cornwall and Devon.  
Price Sixpence.  
By ROBERT WALKER CHILDS.  
By the same,  
**A LETTER ON MINING PARTNERSHIP ON THE COST-BOOK SYSTEM**  
(1854). Price Sixpence.  
London: Simpkin, Marshall, and Co., Stationers' Hall-court.

**ST. JUST MINING DISTRICT, CORNWALL.**—A LITHOGRAPHIC GEOLOGICAL MAP OF THIS DISTRICT, carefully prepared, WILL BE PUBLISHED on the 3rd April, containing the boundary of every sett, every known lode, &c.; also, every close, house, &c. Scale, 10 chains (each 11 fms.) to an inch. Price, Coloured and Mounted, 21s.; Plain, 15s.  
Gentlemen desirous of having copies will oblige by early orders, addressed to Mr. R. SYMONS, surveyor, Truro. Copies delivered in London carriage free; and, if plain or any part of the United Kingdom post free.

### Notices to Correspondents.

Much inconvenience having arisen, in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be regularly filed on receipt: it then forms an accumulating useful work of reference.

**CONCENTRATION OF COPPER ORES.**—I have noticed the process reported by you for reducing low copper ores, as practised at Faldah, in Norway. A patent has been taken out here for the concentration of these ores; no acids are used. In the course of a few days I trust I shall be able to forward you some practical remarks as to the adoption of this new method of reduction. Should it be found practicable, it will enable the mining adventurer to utilise all ores of low percentage, and must materially reduce the cost of working many mines where such ores are produced.  
—GERMANICUS: *Paddington, March 20.*

**THE CORNWALL MINING SCHOOL.**—To whom are we indebted for the introduction of this noble plan?—and was it the intention of the mover to confine its influence and whole sphere of usefulness within the boundary lines of the town of Truro? Was it not the intention of its founder to establish district schools? Then, why not carry out such a plan?—A CORNWALL MINER: *March 16.*

**EAST CORNWALL ELECTION.**—Do the miners intend to re-elect Mr. N. Kendall? or do they prefer one who will protect their interests? No racing of mines, and liberal education for the miners' children!—A CORNWALL MINER: *March 15.*

**ROTATING BUDDE.**—Permit me to inform "R. S." (Truro), through your Journal, that I shall be happy to show him a plan and section of Zenner's rotating budde, if he will favour me with a call. I hoped long since to have placed a model of that machine in the museum of this institution, the patentee having promised it; and I think it will be "Mr. Zenner's interest to place one at our disposal as soon as possible, as it may be a means of introducing what appears to be a valuable machine into the country much earlier than if left to chance.—W. RICKARD: *Mining School, Truro, March 16.*

**ANOTHER LEGAL MISTAKE.**—I observe, in your Journal of March 7, a letter signed "T. H.," in which allusion is made to Harry Lowden, a man who died most suddenly whilst at work in the Brandy Mine, one of the mines belonging to the Keswick Mining Company. This man had been in the employment of the Keswick Mining Company for about 12 months, during which time I am not aware that he lost any time from drinking, one of the charges alleged as a reason why he was dismissed from the Goldscope Mine; and as to his capabilities as a miner, his practical knowledge was unimpeachable. I am induced to write this letter from a desire to remove any wrong impression which your correspondent, "T. H.," may be labouring under, as well as to remove any stigma that may have been unwittingly thrown on the character of a dead man.—R. B. SHEPHERD: *Keswick Mines, Portinscale, Keswick, March 11.*

**IRISH PEAT COMPANY.**—Will you endeavour to ascertain whether this company continues to realise profits? and if so, whether the same amount per week has been maintained as announced at the last meeting?—D. A.: *Paris, March 18.*

**QUARTZ ROCK.**—One who represents 5000 shares in this undertaking complains that the directors of the company have rendered no account of their stewardship. Although repeated applications have been made to the shareholders for funds, their claims have been lately totally ignored. The directors are men of high standing; they refuse to attend to any private applications. The offices are let to an American railroad company, and no information can be obtained whether there are any operations being carried on in California. When the first report was issued, they were informed that Mr. Alderman Carter went down into Cornwall and selected machinery, and the whole project was ushered forth to the public with a flourish of trumpets, the late Lord Erskine being the Chairman, supported by two aldermen, one of whom had passed the civic chair. Our correspondent should apply to Mr. Fred. Dineley, the solicitor and secretary pro tem., who has offices in Austinfrars.

**WHAT ARE MINING DONE?**—"J. P." writes that, in our last Journal, a "Clerk" informs the public how much money has been made by mining. "J. P." thinks the "Clerk" ought to inform the public how much money has been lost, by attending to the advice of those disinterested individuals who proffer their services to guide others in their speculations; he likewise enquires how many thousands have been made in the locality of Sortridge Consoles, and what is likely to be got from several other mines somewhere near Tavistock; an account of those who have been ensnared, and the misery entailed upon many would be perused with interest. [A large amount of capital has, no doubt, been lavishly and wastefully expended in mining; but in the majority of instances it has been in a great measure owing to the want of caution, and credulity on the part of the speculators. Many shareholders, after they have embarked in a mine, never attend meetings or inspect accounts; the consequence is that the entire management is in the hands of a few individuals there, who, although not dishonest, may be incompetent. What we would recommend is, that those who embark, or are interested, in mining should always exercise a due supervision, and this can be effected without vexatious intermeddling or injurious actions.]

**ANGLO-AUSTRALIAN GOLD MINING COMPANY.**—Sir: I perceive that several of the shareholders of this association request that a meeting should be convened, in order that the position of the company may be explained. I was told that by the deed of settlement we were to have an annual meeting held every March. The offices of the company have long since been given up. In referring to your Journal of last week, I observe, in the advertisements, the name of Chas. Hise, Esq., Heathfield-road, Handsworth, Birmingham, as a director of the Albion Porcelain and Bleaching Clay Company; this gentleman was one of the promoters and directors of the Anglo-Australian Company; I would, therefore, advise those interested to apply for information to that gentleman.—LEX: *Gravesend.*

**MINING IN THE ALPS.**—I was rather surprised to read, in your last Journal, that the inspector sent out to report upon the Valais Mines had chosen the precise season when the snow prevented him from visiting some of the concessions which have been acquired by the company; but I have since seen the entire report, and may, therefore, make a few remarks upon the subject. This district is as rich as could possibly be desired; and, unless the mines be situated very far up the mountains, offers immense facilities for carrying on extensive operations, and gaining a fair amount of remuneration with the most primitive appliances. The chief want hitherto has been that of capital; and were that supplied, there is little doubt that immense profits would be realised. One French company, in the immediate neighbourhood of the mines which the Valais Mines has purchased, has been successfully working for some time, and has made profits which justify the expenditure of further capital in their extension; and it is intended to issue a fresh series of shares to raise the requisite amount. Now, I do not for a moment wish to detract from the merits of the Valais district, as I think I have given proof that mines there can be profitably worked, but I contend that the mines should be properly inspected by a French mining engineer, who is thoroughly acquainted with the peculiarities and difficulties, if any, of mining in that neighbourhood. The Poltmore Mine is not yet forgotten by the unfortunate shareholders, and names connected with the management recall such unpleasant thoughts, that I fear the public would not readily embark their money, especially if they also recall the "Gold in Wales" fever, which also too many remember, to their cost. From my connection with the Ark Indisputable Assurance Company, I find certain names indelibly engraven upon my memory; and when assertions for obtaining subscriptions for any purpose are verified by such gentlemen, I think it but fulfilling a duty to throw out a few hints as a caution. In conclusion, I may remark that the Valais district is rich in mineral wealth, and offers every chance of success, but it is absolutely necessary that the shareholders should have competent men in office, or Mining in the Alps may prove no more remunerative than Gold Mining in Wales.—A SHAREHOLDER IN THE ARK.

**ZENNER'S ROTATING BUDDE.**—In reply to the enquiry of your correspondent, "R. S." (Truro), in last week's Journal, I may say that the directors of the Nether Heath Mining Company have been induced to order one of these budde, chiefly through the testimony as to its utility by their late manager, Capt. Jeffrey, of the Drighthead Mines, Cumberland, who has one in operation at his mine, and which, so far as I know, is the only one at work in the country. Mr. Jeffrey has had very great experience in ore dressing, both in the North of England and in Cornwall; and, in addition to his testimony in favour of this budde, published in your Journal of Nov. 24, 1856, Mr. Jeffrey, in reply to my enquiry if he was still satisfied with it, and if it was suitable for our mine, writes me on Feb. 26 as follows:—"Mr. Zenner's budde will suit any mine where there are slimes to wash. That stuff you have over at the old washing floors it would clean well—in fact, it is the best thing I ever saw for slimes ore, or any stuff approaching towards slimes. You cannot work it to so good advantage at the crushing mill as we can, for want of fall, but it will clean your slimes four times cheaper than any other process I know of." Having dressing machinery to erect, and finding Mr. Zenner to be reasonable in his charge for licences, and the cost of erecting one not great, we have determined to give this budde a trial.—J. H. ROBINSON, Purser: *Nether Heath Mine, March 19.*

**COAL IN BIRMINGHAM.**—Can any of your correspondents inform me what is the annual consumption of coal in Birmingham for motive purposes?—ECONOMY.

**IRON SHIP-BUILDING.**—Mr. John Clare, jun., of Liverpool, observes that the present craft generally in use are unmechanically constructed, their powers being solely adapted for smooth water, and many of them being incapable of standing against the elements. The land sea, the crop head sea, and the rolling sea, are not studied in their construction, nor is the force of the wind observed; and the dreadful accidents that now occur could be obviated if a proper system were laid down, by which these vessels could be built. The best iron should be used; and at the present time it behoves the ironmasters of Great Britain to see that the manufacture of that important staple of trade, with regard to ship-building, should be carefully looked to, in order that England may maintain her present pre-eminence position.

**"Q. E. D."**—The mode of smoke consumption you propose was tried, many years ago, in Lancashire, and failed. A few years since it was patented, under the idea of novelty, and attempted to be used by two extensive London establishments; but very soon abandoned. The effects are considerable loss of steam, and very imperfect destruction of smoke, with great risk of explosion. Smoke prevention, by proper ignition of the gases, is perfectly feasible, according to the systems of Mr. Charles W. Williams, Liverpool, and Mr. John Lee Stevens, London; who, whilst they differ in details and peculiarities of construction, agree in the impossibility of consuming smoke when once produced.

**BINKER DOWNS MINE.**—A correspondent enquires whether this mine, which was in existence in 1854, is totally abandoned, or whether it is still working under some other denomination?

**THE FORTHCOMING ELECTIONS.**—I cordially agree with the remarks in your Journal of last week. Previous to the Reform Bill, and the disfranchisement of Great Britain, Cornwall returned 48 members. It was noted for its rotten boroughs, and its whole representation synonymous with corruption. This epoch is now past. In the Parliament now about to be dissolved we have been mis-represented, the mining interest neglected, and an attempt made by some of the members we sent to the House of Commons to impose a tax upon the working miner and adventurer. Let this be remembered on the day of election, and the candidates required to pledge themselves to attend to the local interests of the electors: let not mining, our staple industry, be neglected. The old Cornish spirit is not extinct yet. Let us have none of those good men and true, and such as will not forget the people the sources from which they have derived their wealth. If we are true to our duty, the result is certain, and we shall be able to return those who will do their duty, and not allow the claims of the working miner to be totally ignored, as has been the case in the new laws and almost defunct Legislature.—FENDRAGON: *Tintagel, March 19.*

**"A. P." (Malda-hill).**—The Brighton Hotel Company have obtained their certificate from the registrar. Much progress has not hitherto been made in the formation of the association, which is under the Limited Liability Act. We are given to understand that an amended prospectus will shortly be issued.

**DALECARLIA MINING COMPANY.**—Some three years since, I was induced by one of the promoters to take shares in this association. I was afterwards informed that it was a failure, and that the works were abandoned. Unfortunately, I did not look after my own interests—in fact, I neglected to attend any meetings, having too great a confidence in the directors. Judge of my surprise, some short time since, being in Stockholm, at hearing that the Swedish proprietors, to whom they had reverted, were working them at a profit, and that the superintendent, who had been sent out to manage them, condemned them almost as soon as he had seen them—nay, it was even whispered that he was instructed so to do. I cannot vouch for the truth of this statement, but the mines are now in full operation. Can we wonder that foreign mining is in disrepute, when such practices as this occur? The English company is wound-up, and redress is now out of the question; but this simple fact has taught me that those taking shares should not only ascertain whether the mines were worth working, but likewise if the directors were competent to manage them. One point the directors in mine should always look to, is whether it is a legitimate undertaking, or got up solely for the purpose of trafficking in shares. In many instances, a good property is ruined by those whose only intention is to make a market for such scrip as they may obtain.—A TRAVELLER: *March 18.*

**BALLYVORN COPPER MINE.**—A would-be shareholder, who understands that the prospects of the property are good, complains that he has been unable to obtain information as to the present position of the mine. He has not, on inquiry, received any answer to his queries as to its produce and other matters connected with the adventure. His best course would be to write to the secretary, at the offices.

**"W. F." (Tarbert).**—All quartz and limestone veins do not contain copper ore; there may be a great similarity between this particular stone and that bearing copper, from the Marquis of Breadalbane's property, but it does not follow that it should be of the same nature. The ores of iron, according to the report, appear to be of a most valuable kind, and the appearance of the district may probably bear out the most sanguine anticipations entertained of it; capitalists, however, will be found unwilling to advance their money unless they know the estate has been inspected and reported upon by a competent engineer in whom they can place confidence. This should at once be done, as by its more correct approximation of its value could be arrived at. The property appears to possess great facilities of transport, but this is not all that is required. Previous to works being laid out there are many weighty questions to be considered—as the price of labour, materials, &c. Such a report as is necessary can only be made by a practical mineral surveyor.

**BLAST ENGINES.**—Truman's work does not treat upon the construction of blast engines, but in reference to blast furnaces, and the manufacture of iron generally, it is one of the most valuable works extant.

**CONCENTRATION OF COPPER ORES.**—Sir: The question of independent smelting may for a time rest on a score of one of the things at work. The process described in your Journal of March 7 is one which appears to require but little capital; and poor mankind ore could, by it, be reduced at a cheap rate, on the spot. Surely this is worthy the consideration of some of our mine proprietors. According to the statement published by you, the cost is comparatively trifling; it is worth a trial. I have no doubt that if the owners of the Faldah Works were written to, they would afford the necessary information, so as to lead to its practical adoption here.—G. W.: *Camden Town.*

**CALIFORNIA CONSOLIDATED MINING COMPANY.**—Sir: I have not heard whether this association has again resumed operations in California. I have long since expected to see an explanation from Sir Henry Huntley, of the charges brought against him by the directors. They answered his letter immediately it appeared. By so doing he must have been able to reply to it from California. It would be most satisfactory to the shareholders if, when the gallant knight returns to England he would meet them, and render an account of his stewardship. He would not have an inattentive audience. There are many who would like to know how the money has been expended in California without any return.—PARNUM: *Pools, March 17.*

**THE DUN HILL MOUNTAIN.**—I perceive in the *Times* of yesterday a prospectus of the Dun Hill Mine, in which it is stated to be a freehold. I would recommend those who purpose to invest in it to satisfy themselves fully before doing so. I was in Nelson two years ago, and declined having anything to do with the mine, for the following reasons: 1. Because the projectors had only a lease for a few years, and not a freehold. 2. Because a considerable portion of the mine veins or lodes to the north dropped out on the sea shore of Dunville island, a few miles off, which when purchased from the natives, would, from the easy access, take off all the labourers from and depreciate the Dun Mountain Mine. 3. The cost of labour, the distance from the port, and the extravagant conditions demanded. 4. It appears that the 17 and 23 per cent. obtained was only out of the picked ores. The general mass is of much lower value, and can only be available when labour is abundant and cheap.—A LATE VISITOR TO THE DUN MOUNTAIN: *March 17.*

**WEST MARLBOROUGH MINING COMPANY.**—Another batch of shareholders, holding 2000 shares, have, through Mr. Lindo, of King's Arms-yard, succeeded in getting from Mr. Ambrose Moore 3s. 3d. per share. It may be remembered that Mr. Furlonger and Mr. Goodall invited the whole of the shareholders to co-operate, but from the fear of having to contribute towards the expenses, kept back. The sum which came forward received 4s. 6d. per share, and Mr. Furlonger and Mr. Goodall, with several gentlemen connected with the Stock Exchange, in the most handsome manner paid every expense out of their own pockets. The next lot who may seek the assistance of Mr. Lindo may very likely be offered 2s. 6d. per share, and will have the option of taking it, or instituting proceedings in Chancery.

**ON GOLD AND SILVER EXTRACTION.**—Mr. P. A. Godefroy, after some lengthy comments on the letter of "Practice," in last week's Journal, says,—"I turn now to a more worthy and ingenious correspondent, who does not conceal his name. And in answer to Dr. Collier's indirect allusion to my recent remarks concerning his novel treatment, I wish just to observe, that not professing myself to be scientifically learned in chemical lore, and pretending only to possess some measure of hard-earned practical experience in solvents and other objects in this department of chemistry, it is very possible I may, in describing my process, have failed in very nice distinctive application of technical terms; but, my aim has been to make myself intelligible to parties who were in a position to reap benefit from my discovery; and in this, I believe, judging from the extent of my correspondence on the subject, I have pretty generally succeeded. I hope Dr. Collier will not take it amiss, if I again enquire, where appear the beneficial results of his treatment lately announced as new and successful, but to the assumption of which I took the liberty to offer a respectful, but decided negative. While agreeing that lime combined chemically with sulphur, I differ with him entirely in its being assumed to 'hold mechanically the small specimen of gold from being lost,' permitting the evaporation simply of the sulphurous fume while retaining the metal; and I speak here, as already said, upon the authority of my own previous trials of that process, contending that the effectual method of securing the gold or silver, or any other metal combined with sulphur, is by my own first-discovered means of solution in a vessel, presiding all evaporation, from which, of course, no substance can escape; and, wherein the sulphur being extracted and absorbed, the metallic deposit does not adhere in any way, but remains in a granulated state to be reduced afterwards by ordinary smelting operations. This I have repeated often; but autologies are occasionally useful, and especially in a case like the present, where the treatment is so simple and inexpensive, and the effect so surprising, that the initiated in metallic mysteries can hardly believe it even on the evidence of facts. But, I must not be prolix, and should, indeed, apologise for having intruded so far. To conclude, I say to Dr. Collier—and with all deference to the reputation of the eminent professor he has quoted, and his ever-memorable discoveries—*Pisces coronati* only. The object here is a commercial, involving also a great national benefit. Show me any system by which these 'specimens' of the precious metals (I bow to the doctor's own term) either of gold or silver, or, indeed, any other metal, can be profitably—*I say with emphasis*—profitably secured, and at once I yield the palm of originality in this matter; but, that not having heretofore been done, I think I may fairly claim for myself, and my process, the merit of doing it.—*King's Mead Cottage, New North-road, Islington, March 16.*

**GOLD EXTRACTION.**—You have been good enough to allude to my process for the extraction of gold from auriferous matrices, and I therefore take the liberty of requesting your permission to mention, through the medium of your Journal, that I shall be happy to explain my system to any of the gold companies, or others, interested in this important question, and to operate on their ores.—J. GARRIN: *King William St., March 19.*—[The foregoing letter is the best reply we can give to correspondents who desire further information on this much-repeated question of gold extraction, or reduction. We understand that the gold which exists largely in a non-metallic state in the quartz, or matrix, and which is altogether lost under the present systems, is brought by Mr. Squire's method into a metallic state, by the aid of certain re-agents, which decompose the oxide state in which much of the gold is discovered to be, and is presented in a form with both density and specific gravity; while such particles previously visible in minute form, if at all, are developed in globules, and the quartz at the same time becomes disintegrated, and perfectly friable, on the application of the slightest pressure.]

**ROTATING BUDDE.**—We are requested to inform "R. S." (Truro) that every facility will be given by the patentee to parties inclined to test the powers of the apparatus.

## THE MINING JOURNAL.

Railway and Commercial Gazette.

LONDON, MARCH 21, 1857.

Some of those who are in favour of the RATING OF MINES have argued that the establishment of a mine, by attracting population, has in a greater or lesser degree engendered pauperism; these premises we emphatically deny, and if anyone will take the trouble to look over the statistics of the several counties they will find there is less poverty in mineral than in agricultural districts. The capital generally employed in a mine is subscribed elsewhere, and is brought from afar with the intentional object of being fructified in another locality; the owners of the land have in general not the spirit to develop their underground property, though invariably when they lease a mine they are ready to exact exorbitant dues on that material which they have not the energy to raise themselves; their estates are improved, and although the adventurers may reap no benefit the lord always inflexibly demands his dues. In agricultural districts, when the labourer is past work his only refuge is the poor-house; but, we would ask the most casual observer, who has been in Cornwall, to state what class of people he has seen employed on the dressing-floors of our mines; he will, if he speaks truthfully, say the majority are aged worn-out men, feeble women, and young children, who are thus enabled to earn a pittance which renders them no burden to their relatives, and enables them to avoid that last, wretched resource, the Union. Various modifications of this tax have been proposed by some of our inane legislators, who, without knowing anything of the wants and necessities of the miner, profess to pass laws for his amelioration and benefit.

It has been calculated that the mineral produce of Great Britain is about 33,000,000*l.* sterling; surely those who are instrumental in bringing so much wealth from the bowels of the earth ought not to have their claims ignored, or what is worse, made the object of experimental legislation by persons who are ignorant of their usefulness, and incapable of judging of the bearings of a subject on which, during the past session, they have attempted to legislate. If we look to the northern districts, and Derbyshire, where many of the mines are worked by individuals who would otherwise be unemployed, how would this precious piece of legislation have worked? it would have deterred hundreds of industrious individuals from obtaining a precarious existence; these men in general are agricultural labourers, who only take to mining when other work cannot be obtained; their only resource being, this failing them, the Union, as it is impossible for them to save anything from the scanty wages they receive from the farmer. To the consumer this is a question of great importance, as a diminished produce of the mineral must necessarily increase the price of the metal; and, although this subject may by some be regarded merely as a local question, it will be seen that when all its bearings are considered that it is one of national interest.

At the forthcoming election the candidates will, no doubt, use the accustomed stereotyped phrases; foreign policy will be talked of, and various other stalling cries made use of for the time being; let the electors of the mineral districts not be beguiled by any specious promises, but demand from those who seek to represent them positive pledges that they will faithfully and sedulously attend to their interests, and that this attempt to levy an impost on the poor miner shall be resisted to the utmost extent of their ability. With these remarks we conclude; we shall not, however, relax in our exertions. We need not say we have no political bias, we wish that justice should be rendered to the miner and the mining interest; this we will endeavour to advocate, and trust that we shall obtain the co-operation of "One and All" to achieve this desirable end.

In every direction fresh evidence is brought to bear in demonstrating the importance of the mineral industry of this country, and circumstances constantly arise by which statistical information is given. Another case presents itself in the return ordered by the House of Commons of the receipts and disbursements of the Duchy of Cornwall for the year ending Dec. 31, 1856. The document is not drawn up with a desire to render it very clear, and either many items of receipts are altogether omitted or intermixed with others, to preclude, apparently, the bearing of any point being minutely determined. It is sufficiently intelligible for the general purpose of showing the resources of the PRINCE OF WALES from his mineral duchy, and is a useful addition, or rather appendix, to the returns of exports and imports which are now amongst our serial publications.

The total receipts for the year ending Dec. 31, 1856, were 67,181*l.* 11*s.* 11*d.*, but as there were arrears of 1855 amounting to 394*l.* 12*s.* 7*d.* included in this sum, besides 7953*l.* 14*s.* 6*d.*, which was the cash balance at the beginning of the year, it necessarily follows that the actual income for the 12 months was 58,892*l.* 18*s.* 10*d.*

This official document furnishes much matter for remark. First let us see how it bears on the point with which we commenced our remarks—namely, evidence of the position and progress of mining. "Royalties and rents of mines in Cornwall and Devon" are made to appear as only 9185*l.* 3*s.* 5*d.*, yet there is a heading of "rents and profits of courts" which yields 23,426*l.* 8*s.* 3*d.*, so that literally "royalties, rents, and profits" amount to 37,611*l.* The royalties from the coal mines in Somersetshire make a special item of 2451*l.* 18*s.* 10*d.*, so that we confine our figures to the income accruing from royalties, &c., in Cornwall and Devon; and when it is borne in mind that the dues are generally a twentieth or a fifteenth, the total produce of the properties may be quickly determined, and show the extensive operations which must be going on to admit of one proprietor or lord of manors enjoying such a large income from this source of national industry, and consequently confirming the arguments on which we have grounded several articles on the subject of mining prosperity.

While we thus make this allusion in a satisfactory sense, we lament to have occasion to call special attention to a point which is detrimental to the progress of mining, and which the Duchy of Cornwall should be the last to impose—we allude to the exaction of "fines" on granting leases. We can well understand that needy landlords desire to realise a present benefit and grasp at every chance of accumulating ready money, but it is certainly adverse to the ultimate benefit of the Duchy that the PRINCE OF WALES should be made to appear in the category of those who oppress and frustrate mining enterprise. The fact is that the officials of the Duchy seem desirous of rendering themselves generally notorious in this respect: for constant complaints are made to us of the absolute extortion frequently enforced in the name of the PRINCE OF WALES as DUKE OF CORNWALL, when licences and leases are applied for at the office in Somerset House. These returns admit that 150*l.* were received as the "fine" for granting a lease of the West Wheal Edward Mine at Calstock, and 100*l.* for the lease of West Penstruthal in Holston. This should not be, and we can scarcely bring ourselves to believe that PRINCE ALBERT is cognisant of the fact; but as he is the representative of the PRINCE OF WALES and presides constantly at the Council of the Duchy, the public hold him responsible, and comment accordingly; more especially as so large a proportion of the income is paid for the use of the PRINCE OF WALES, as will be presently shown, and such a mere trifle invested on capital account to accumulate for the PRINCE. The figures will also determine why the "officers" are so anxious to charge every possible fine and rent.

We have already shown that the actual income for the year was 58,892*l.* 18*s.* 10*d.*; of this sum 43,340*l.* were paid to "His Royal Highness's use" that is to PRINCE ALBERT, and represent nearly 74 per cent. of the actual revenue: 5144*l.* 5*s.* 10*d.* is represented as cash balance, and 4384*l.* 17*s.* 6*d.* is invested in Three per Cent. Reduced, so that these three items represent a total of 49,923*l.* 3*s.* 4*d.* as the beneficial results to the PRINCE OF WALES at the close of the year. The balance of 17,923*l.* 9*s.* 10*d.* represents disbursements; of this sum just one-third, or 6034*l.* 18*s.* 10*d.*



absorbed by salaries to "officers" generally, and is 12 per cent. on the actual income, the "principal officers" taking 35944. 10s. 4d. as their proportion of payments to officers generally. This comes out in bold relief when it is contrasted with the disbursements for "wages," which are lumped with "rates, taxes, stationery, wages, and incidental expenses," and yet collectively show an item of only 6641. 11s. 5d., or a little more than 1 per cent. on the income. Law charges, which are not in any way defined, take 15734. 4s. 9d., or 24 per cent. of the whole. The amount appropriated to the Church in the shape of tithes is 831. 5s., or exactly the eighteenth part of 1 per cent., while the poor are remembered under the head of "donations and charities" to the extent of 8937. 15s., or 14 per cent. Thus far we have confined ourselves to receipts and disbursements, and are now come to "capital account." The balance cash on Dec. 31, 1855, is set down in this table at 73367. 0s. 7d., yet in the "receipts and disbursements" the cash balance at the same date is represented as 79531. 14s. 6d., so that there is here a discrepancy of the sum of 6171. In Three per Cent. Consols there stood 94341. 19s. 1d., and 14,117. 2s. 1d. in Three per Cent. Reduced, making collectively 30,881. 1s. 9d., and the total to capital account on Dec. 31, 1855, represented at 33,210. 2s. 2d.; but if the cash balance of 61441. 5s. 10d. in "receipts and disbursements account" be added—and surely it is, to all intents and purposes, capital—there is a total of 38,354. 8s., or an increase of nearly 8000s., being 94341. 19s. 1d. in Three per Cent. Consols, 16,220. 1s. 1d. in Three per Cent. Reduced, and 70781. 3s. 3d. in New Three per Cent. 4767. 18s. 9d. cash balance, as shown in this capital account, and 61441. 5s. 10d. as just explained. This sum of 38,354. 8s. is, however, a very miserable amount for the total invested capital and cash credit of the PRINCE OF WALES from his Duchy of Cornwall, considering the years it has been in course of accumulation, and the wretched charges and disbursements which have been made, apart from the salaries of the officers, and the income to PRINCE ALBERT, on account of the PRINCE, his son. On these points, however, we desire not to dwell; our province is to point out the advantages resulting from mineral property, and to protest against the abuses of position, which the officers of the Duchy desire to enforce, by throwing difficulties in the way of legitimate mining.

Attention is so much engrossed at present by politics and electioneering business that hardly anything else is considered. Although we enter heartily into the interest of these matters, yet, ours being a Journal wholly dedicated to science, we do not seek information, or offer opinions, on the subject, except that we hope Cornwall and Devon will look to their own interests, do their duty, and repel the men who would tax their industry, cripple their trade, and destroy the most patient, and certainly the most industrious and persevering, race of men our country can boast of.

In the hurry of business, now so all-engrossing, it may not ill-become us to direct attention to the late fall in the standard of copper ore. Why this is, we confess, we are at a loss to know. What on earth can the crisis in politics have to do with the price of copper ore? The smelters know, and they only know, the barometric changes in the great copper scale; to outside viewers their ranges are as extraordinary as the vagaries of Saturn. This curious question was solved by a Cornishman (ADAMS), but we defy the cleverest Cornishman alive to unravel the mystery of smelters' prices. No matter what is up, whether weal or woe, an excuse is always at hand. Money is scarce, down goes the price of copper; money is plentiful, and other speculations are ascendant, down goes the standard, until the smelters find they outrun their policy, and stop such mines as Tywarhayle, and other low-priced ore-producing mines. When their highnesses please they restore the standard; many struggling little mines, full of life at the high prices, lay out capital extensively, firmly trusting that the good time has come, and which trade generally would warrant, when, on a sudden, a frost, "a bitter frost, nips all their greatness in the bud," and they fall, like Lucifer, never to rise again. And all this to suit the caprice of smelting.

Do they lower the price of the manufactured article in a similar manner? We doubt it; indeed, we know they do not. They should remember the *tu quoque*, and "Live and let live."

An important change in the "spirit of the dream" is at hand; on all sides we hear that the best miners are leaving the country for Australia, America, &c., and smelters, as well as mine proprietors, will do well to consider the old Cornish couplet—"Tis too late, when the squire has drained every drop, for the landlord or landlady to cry, Stop the tap."

If collateral evidence were required of the importance of the district which the WEST OF IRELAND MINING COMPANY has secured for carrying out their operations, it would be found in an article which appeared in the *Dublin Evening Post*, of Thursday, March 12, with a view of impugning the accuracy of the statements and comments which have been made by ourselves, on several occasions, in reference to the mineral yield of the Sister Isle, and the advantages which will accrue to the country generally by the opening up of a locality so rich in minerals as is the West of Ireland. Our general defect of information is sought to be shown by reference to two points—first, that we represented the dividend of the MINING COMPANY OF IRELAND to be 8½ per cent. for the half-year, instead of 7½; and secondly, that our statements in respect to the result of working through quartz at Ballydehob were greatly exaggerated; therefore, that our comments as to the general wealth of Ireland, in a mineral point of view, were equally devoid of substantiality, and that our sole object was "rigging the market," as the article in question is sapiently headed. That our contemporary of the *Dublin Evening Post* is anything more than a mere cat's-paw in the matter, is evident to everybody who has the slightest knowledge of the current events in Ireland, and it is therefore with most unfeigned regret that we find this influential and important commercial paper lending its columns to the endeavour to prejudice public opinion, and to frustrate an undertaking of such real value and consequence to the general prosperity of Ireland, as a company of strength and respectability, having for its object the development of her vast and undenied mineral resources.

The source of the article is the MINING COMPANY OF IRELAND; if it has not emanated wholly and bodily from that jealous and narrow minded directory, who wish to monopolize everything, yet have not the heart to venture a shilling, it is quite clear that the information must have been conveyed to the *Post* by some of the committee or officials of this company, who desire thus to render themselves conspicuous as obstructives to Ireland's advancement in the general progress of all commercial matters.

Our object has been the reverse. We desire to encourage the employment of British capital in Ireland's industrial enterprises, and knowing that we can do so most conscientiously as respects her mineral produce, we have drawn attention to the question by stating facts—facts so undeniable that those only of gross effrontery would have the temerity to gainsay or question them. We believe that Ireland presents many points of deposits of ores of almost every kind, both rich and extensive; and nothing, we feel convinced, is wanting but energy and funds to bring these districts into full bearing, and thereby assist materially in the amelioration of the people and the country, in every department of trade and commerce; for surely all are more or less associated with, or dependent on, the production of mines, which, as we have repeatedly shown, represent the enormous sum of 27,000,000l. in the exports, which collectively amount to 115,000,000l. from the United Kingdom.

Our articles have not been communicated from the other side of the Irish Channel, as asserted by our contemporary; and, indeed, the facts are so patent that they require no special communication, especially to the MINING JOURNAL, which is essentially a class paper, and which would be lamentably deficient if it were not conversant on all these points and details. One error, it appears, we did commit. We stated that the dividend declared by the MINING COMPANY OF IRELAND was 8½ per cent. for the half-year, instead of 7½, and consequently we spoke of a rate of 17 per cent. per annum, whereas we ought to have said 15 per cent. This mistake arose simply and solely by placing faith in a printed statement, in which, no doubt, the blunder was made most unintentionally; but it is quite clear that it ought to have been 17 per cent., while, if the affairs of the company were conducted with due regularity and judgment, the division of profits might have been even still more—at least, so our contemporary, the *Dublin Evening Post*, demonstrates in its article on "Rigging the Market." It is therein admitted "that arrears have been suffered to accumulate through irregularities in the mode of conducting some branches of the business of the company;" and yet, a little further on, the "judicious" management of the company is said to entitle it to the confidence of the public. It is not for us to reconcile these two assertions, so contradictory.

With the exception of this point of 17 instead of 15 per cent. dividend, we deny emphatically that we have committed any error, and our position and long standing are sufficient refutation of the charge that we desire to

"mislead the credulous." However, to be brief, as respects the other points—First, we can refer to the letter of Mr. HUMPHREY, which appeared in our last number, under the initials of "T. J. H.," who therein confirms our general views of the Mineral Wealth of Ireland, and then whom there is no one more competent to form a correct and sound opinion, while he is a well-known authority. In fact, his views support ours fully, and are in direct antagonism to those enunciated through the *Dublin Evening Post*. Another correspondent, in this day's Journal, likewise alludes to the advantages to be derived from the formation of a powerful company, and plainly accuses the Mining Company of Ireland of being the authors of the attack.

The statements of the discoveries at Ballydehob are true: the whole country round will endorse them; and the manager of the Mining Company of Ireland himself confirms our assertions. Copper has been discovered, and the theory laid down by Mr. HOSKINS practically established. Whether there is a "continuous" lode or not has yet to be determined. "The result is," says the *Dublin Evening Post*, "that no continuous lode of copper has yet been found at the mine in question." The finding of ore is in fact admitted, but a "continuous lode of copper" has not yet been found. We should indeed rejoice to hear that a lode of copper was met with; and we apprehend that it will be difficult to discover such a mass of metal, but we do believe that a continuous lode of copper ore will be discovered even if it be now in bunches only. This is mere special pleading—unworthy of any person or company—and especially with those who do know the difference between "metal" and "ore." The summary of the whole is, that the Mining Company of Ireland desire the property secured to the West of Ireland Mining Company, and resort to this method to prevent competition; but, alas! for them, too late. It is true that no direct offer has been made by this body, but the negotiations in London have been watched with great anxiety; they have now terminated in the formation of the company, the subscribed memorandum of association of which is now in the hands of the solicitors.

The true and actual motive of this prophetic warning in the *Dublin Evening Post* is wholesale eulogy of the Mining Company of Ireland, and wholesale condemnation of all other companies, either past, present, or future! Who ever questioned or envied the success of the Mining Company of Ireland? but because, notwithstanding, to quote the writer's own words, "irregularities in the mode of conducting some branches of the business," and the "everything rotten" in their affairs to which he alludes, the Mining Company of Ireland can only pay 15 per cent. dividend, let no further capital, skill, or enterprise break ground in Ireland! Some bunglers have tried it, and failed; therefore, let no man, or company of men, however experienced, enter the rich field which we, the Mining Company of Ireland, alone are fit to occupy! Nothing more impudent, perhaps unintentionally so, or unwarranted by the facts, has come under our notice for many a day. Such attempts at reasoning really require no answer; as we cannot believe that there is a sane capitalist in the three kingdoms who will not at once see through them, and the motives by which they were dictated. Any company claiming public confidence will be judged on its own merits, irrespective of the existence, or intended opposition, of any other, which, if it have overcome "arrears," "irregularities" and "rottenness," should be content with the enjoyment of the happy and profitable position in which it now finds itself, and scorn to play the dog in the manger, by attempting to deter others from attaining, what it cannot reach, even if it would.

We have, unhappily, another evidence during the past week that "the (assumed) wealth, position, and standing of its proprietary" afford no positive security of the stability of a bank. It would appear that our predictions as to the future of many such established and projected institutions will be realised even more rapidly than we anticipated. Another has been added to the list of failures, in the LONDON AND EASTERN BANKING CORPORATION. "Owing," says the City Article of the *Times* of Thursday, "to the assistance which has been obtained, and which has prevented any direct stoppage of payment, the full details of the course of management which has compelled the undertaking suddenly to wind-up, with the loss, as it is believed, of a very considerable portion of its capital, will probably not come before the public. That great laxity must have prevailed is to be inferred, however, from the fact of 6 per cent. dividends having been paid up to July last, when the condition of the bank was stated to be so prosperous as to render it expedient to establish two new branches, the meeting being also informed that the audited accounts, after allowing for the dividend, the payment of all expenses, and writing off bad debts, showed a surplus of 10,378l. to be carried forward. Either this statement must have been deceptive, or the whole of such difficulties as have been experienced must have occurred in the subsequent interval."

While it would doubtless be a melancholy satisfaction to the shareholders to know to which of these alternatives they may attribute their present unfortunate position, this additional failure is but another instance of the insecurity of banking adventures, as contrasted with mining and other branches of commercial enterprise; arising from the difficulty of getting at the actual state of their affairs, the mystery (to the uninitiated) in which their transactions are so often clouded, and the very variable nature of their securities.

We are told, for instance, in the same article of the *Times*, that "at a meeting of the Alliance Bank at Paris, on Saturday, the report presented stated that the profits from the 7th of April last (the date of commencement) to the 31st of Dec., had been 19,215l. Out of this it was agreed to pay a dividend of 11. per share, which is equivalent to a rate of 16 per cent. per annum, and to appropriate 1735l. for the entire discharge of the preliminary expenses, leaving a surplus of 6331l. to be carried forward."

Now, without being in a position to question for a moment the perfect accuracy of this alleged report, could we, with the ominous facts daily disclosed before our eyes, be green enough—to use a vulgarism—as to trust that the accounts had not been cooked, or coerced up for the nonce, without satisfying ourselves, so far as that might be possible, amidst a wilderness of accounts, that all was right? We repeat that we know nothing of, and have no reason to suspect, the management of the Alliance Bank of the slightest irregularity; but in these days it is the duty of all public companies to be more than ordinarily explicit with their shareholders and the public; and of shareholders and the public to be, if not distrustful, at all events, jealously particular, in their investigations into the management of those to whom their capital is entrusted.

We are told that the London and Eastern Banking Corporation always excluded the representatives of the Press from its meetings. When any body claiming public confidence adopts this course, we should regard it as suggestive of a doubtful position, and still more dubious intentions. Dishonest men only should fear publicity—honest men should court it.

The experiments in the factory department of the Woolwich Dockyard, under the sanction of the Lords of the Admiralty, in order to test the value of M. Pauven's invention for converting iron into steel by a chemical process, have resulted in the utmost success as regards the metal required for the manufacture of chisels and other tools, but the patentee will, it is stated, require a different apparatus for the manufacture of nuts and screws. Experiments for the latter purpose will, as at present arranged, be carried on at the factory department on Thursday next. The metal is denominated by the patentee "homogeneous metal," and has the advantage over malleable iron of being considerably lighter, and much more durable.

**THE COAL TRADE.**—From the annual statistics, issued by Messrs. Laird, of Liverpool, it appears the exports of coal in 1856 were—For Northern ports, 3,180,977 tons; from Yorkshire ports, 159,448 tons; from Liverpool, 414,311 tons; from Severn ports, 1,259,740 tons; from Scotch ports, 332,473 tons: being a total export, in 1856, of 5,346,949 tons, against 4,573,259 tons in 1855.—During 1856, the following quantities of coal were carried by railway: By the Great Northern, 591,434 tons; by the London and North Western, 443,672 tons; by the Eastern Counties, 11,265 tons; and by the Great Western, 47,348 tons: the total by railway being 1,246,299 tons.—During January, 1857, the exports were 303,019 tons, against 290,099 tons in the same month of 1856.

**THE METAL TRADES.**—A very useful Chart, prepared by Mr. Johnston, metal merchant, of Glasgow, is now ready: it contains, amongst other information of the greatest interest to all connected with the metal trades, an elaborate diagram, showing at one view the prices of the principal metals during the last 16 years, the Birmingham wire and metal gauges and the modern Belgian zinc gauge, the weight and thickness of lead piping of various diameters, &c., thus forming a valuable work of reference for the counting-house of the iron merchant or broker. Copies may be had at the office of the *Mining Journal*. Price: Mounted, on rollers, 21s.; on plain sheet, 15s.

## THE MINING AND INDUSTRIAL INTERESTS OF CORNWALL.

(FROM OUR CORRESPONDENT IN WEST CORNWALL.)

MARCH 19.—There has been a moderate amount of business done in mining shares during the week, and it is hoped the share market will be still more active as the spring advances, and the elections are disposed of. The price of copper ore experienced a further reduction last week, although the smelters still charge the same prices to the manufacturers as they did five or six weeks ago, when they paid the miners higher rates. The standard is still a good one, and remunerative; but it is difficult to see that there was any sufficient reason for the reduction last week of 3s. per ton of ore, considering that fine copper still makes 135s. per ton. The smelters have been enhancing their profits week by week since the last sale in January. They surely ought not to lower the standard any further at present, as fine copper makes so high a price, and the advances from the manufacturing districts are of a favourable character. The progress of the home trade may be somewhat deranged for a few weeks by the election proceedings; but the foreign trade is reported to be in a sound and healthy condition. It is expected that the demand for metals will be more active in a few weeks, and, therefore, there is reasonable ground to hope that a firm standard will be maintained.

The average produce at the Ticketing last week, March 12, was 6½; price per ton, 74. 4s. 6d. The produce in the previous week was also 6½; price per ton, 74. 7s. 6d.; thus showing a decline last week of 3s. per ton. The price of ore copper last week was 106s. 5s.; in the previous week, 109s. 7s. Deducting the price last week from the price of cake copper, 135s., it appears the smelters retain to themselves 28s. 15s. per ton for returning charges and profits. On Jan. 29, the smelters' amount was only 16s. 6s. per ton. As they have now so much increased their profits, there is reason to hope that they will be satisfied with the present prices in their favour, and will consider that a further advance is due to the miner as soon as the metal trade becomes more active.

There have not been any remarkable improvements in mines to stimulate prices during the past week. Wheal Buller is stated to be looking well, and shares are firmly held, price 340s., and upwards. Confidence is also expressed in Alfred Consols, and shares have changed hands at 227. 10s. Basset shares have rather declined of late. St. Day United is spoken well of; and West Basset continues to look favourable for a productive mine. In Great Alfreds there has been some business doing at about 10s. South Frances shares are at 335s. North Pool is reported to be improving; and North Roskear has good prospects. North Frances shares advanced last week to 21s. but have since declined. Cargoll advanced to 52s., but shares have receded to 40s. and 45s. In East Alfred, a mine of considerable promise, shares have sold at 2s. 5s., and upwards. East Falmouth is said to be looking well; shares are about 3s. At Wheal Victoria, a very promising lode is reported; a call of 5s. per 2000th share has been made. Wheal Margery is looking well in the bottom of the mine, and the heavy call made recently will defray the costs of machinery, and place the mine in a good position. The tin mines are doing well with the present high prices of black tin. Of Great Wheal Vor there is a favourable report, and it is hoped this important undertaking will repay the shareholders for their perseverance and great outlay. At Wheal Lovell (as was mentioned in the Journal last week) Mr. Gwatkin, the owner of the soil, has consented to reduce the dues from 1-20th to 1-40th, in consideration of the adventurers forking the deep part of the workings. This is only one instance of many in which the landlords in Cornwall have acted liberally towards mining adventurers, and have found that course in the end most profitable to themselves.

The pupils of the Mining School at Truro have been occupied, amongst other things, during the session, in making an underground and surface plan of Wheal Jane Mine, in the neighbourhood of Truro. This, of course, brings the operations of practical mining to some extent under their notice. They have also paid a visit to Messrs. Harvey's foundry and engineering establishment at Hayle. There are all necessary facilities in the institution at Truro for teaching chemical metallurgy; and the value of the school for this purpose is admitted. Still, a considerable prejudice exists against the institution, and I am informed that the pupils do not increase. It is said by mine agents, that the only way of imparting instruction which would be useful to the mining body ultimately, would be by giving cheap instruction in mineralogy, &c., in the midst of the mining districts. Whether this will be carried out or not remains to be seen; but even if it is, the institution at Truro will be found useful for teaching chemistry, and some other branches. The establishment of the school at Truro, it is hoped, will lead to further and more effectual exertions for the instruction of the working miners, who are a shrewd body of men, and would not be slow in applying practically whatever scientific knowledge might be communicated to them.

The county and borough elections continue an absorbing subject of interest. When I wrote last week, it was fully expected that Mr. Humphry Williams would have come forward as one of the candidates for West Cornwall. Circumstances, however, prevented his doing so, and it was then thought that Mr. Michael Williams and Mr. Tremayne would have an uncontested election. The latter gentleman is a landed proprietor, principally in East Cornwall, and is scarcely known to the electors of West Cornwall. Great dissatisfaction was felt among the mining interest and middle classes of West Cornwall, that there should be a prospect of Mr. Tremayne succeeding such a man as Sir Charles Lemon.

Mr. Richard Davy, of Redruth, a gentleman well known and highly respected amongst the mining interest, had been applied to, and had consented to come forward, but unfortunately the sudden and serious illness of his brother, Mr. Stephen Davy, obstructed for a time this desirable result. Mr. Stephen Davy has now in a great degree recovered, and consequently, at Wheal Buller account this week, Mr. Richard Davy, on being again applied to by an influential body of mining adventurers and others, consented to come forward, and a very strong feeling in his favour is expressed at Redruth and in the other mining districts. On the other hand, Mr. Tremayne will be supported by some of the most influential landowners of the western division; it will, in fact, if he goes to the poll, be a contest between the landed influence on the one hand, and the mining interest and the middle classes on the other. In West Cornwall, the mining interest is very strong, and "one and all" is now the cry amongst them. A severe contest is anticipated, and scarcely any other business will be attended to until it is over.

At Helston, Mr. H. W. Schneider, the chairman of the Great Wheal Vor Company, was announced, and as that mine employs a large body of people in the district, and Sir Richard Vyvyan had retired, Mr. Schneider would no doubt, if he had come forward, been quietly elected. It appears, however, that he has but up for another borough.—Sir Charles Lemon has issued his retiring address to the electors of the Western Division, in which he reminds them, that he and his father (Sir William Lemon) have represented the county nearly 82 years. He retires in consequence of the infirmities of age. Sir Charles, it may be remarked, has long been conspicuous in the county, not only as a politician, but as a patron of science, and himself a scientific man of considerable acquirements. For many years he has been the President of the Royal Geological Society of Cornwall, the Royal Institution of Cornwall, and the Polytechnic Society, institutions which are an honour to the county. But for some time past he has not taken the active part he was formerly enabled to do at the meetings of these societies, in consequence of the decay of his faculties through increasing age.

## THE IRON AND COAL TRADES OF STAFFORDSHIRE.

(FROM OUR CORRESPONDENT IN WOLVERHAMPTON.)

MARCH 20.—The Iron Trade remains steady, without manifesting any extraordinary degree of animation. The gratifying announcement brought on Tuesday, that the import duty on iron in America was reduced from 30 to 24 per cent. (not to 20, as erroneously stated), gives promise of an extension of the American demand. The reduction comes into operation in July next, and probably in little more than a month large orders will be received in anticipation of it. Such a reduction is likely to lead to others, and we may expect, that the fiscal obstacles which check the free interchange of commodities will shortly be diminished, and ultimately removed in every country, which will add to the wealth and prosperity of all.

The preliminary meeting of the iron trade will take place next week, and there is no doubt but that present prices will be maintained.

The approaching elections are now occupying much attention, and a strong feeling exists in this division of the county, to return a gentleman who is directly connected with its commercial and manufacturing interests. Hitherto connections of the aristocracy have represented South Staffordshire, but in the next Parliament it is pretty certain, that one of the members will be a gentleman identified with the iron trade. Mr. W. Mathews,







the change have been proposed. The sun is the only external source from which the earth derives any perceptible heat; but the heat thus received is rapidly diffused into space by radiation, and were it not for the obstruction presented to radiation by the atmosphere, the surface of the globe would be much cooler than it is. It has been supposed that the action of the sun was in former periods more powerful than at present, in consequence of the earth's orbit having become more circular, and its mean distance from the source of heat thus increased. According to the views of Sir John Herschel, the temperature of the earth might have been from this cause three per cent. greater in former geological periods than it now is. The difference, however, would not, as Mr. Phillips observed, be sufficient to account for the growth of tropical plants in this part of the globe. Sir Charles Lyell is of opinion that the difference of climate might be explained on the supposition that there was a much greater extent of dry land within the tropics, and a smaller quantity near the poles, the effect of which would be to increase considerably the temperature of all parts of the globe, of which Lyell calculated the increase of heat that would have been derived from such a distribution of the land, and arrived at the conclusion that it would not have been sufficient to account for the growth of tropical plants in northern latitudes. Another hypothesis connected with the variations in the state of the globe was, that the land was more elevated, but this would account for the globe being colder than at present, instead of explaining the additional heat. The fact that there was a glacial period, in which icebergs, laden with the rocks from distant mountains, deposited their burdens on the lands of the temperate zone, and under water is proved by the fragments of rocks similar to those found only in Norway, being scattered over various parts of England and of Central Europe. Mr. Phillips described at some length, by reference to present phenomena, the process by which glaciers from the mountains of Norway might have been extended in the floods on that coast, and being then broken off, floated as icebergs laden with debris from the rocks to the south. After noticing the various hypotheses accounting for variations in the state of the globe, Mr. Phillips said that none of them satisfactorily explained the high temperatures of the globe, as indicated by tropical vegetation in the present zone, and we must look for a solution of the problem in the internal heat of the earth, which subject he should consider in the next lecture.

## BRISTOL MINING SCHOOL.

Mr. G. C. Greenwell gave his first lecture on Ventilation on Monday. He observed that the air in mines was vitiated by the liberation of carbonic acid and hydrogen gases from the strata, by the combustion of lights, the respiration and perspiration of the miners and horses, the decomposition of animal and vegetable matter, and the absorption of oxygen by some of the minerals. Most of the explosions in mines arose from deficient ventilation. It was found that men required about half a cubic foot of atmospheric air per minute, but in mines where the air was liable to impurities from so many causes, and subject to such considerable variations in temperature and quantity, it was necessary that not less than 300 cubic feet per minute for each man and boy should be passed through the workings. The effect of furnace ventilation was then noticed. Furnaces, when in their first application, placed at the bottom of large chimneys at the surface, until it was suggested that the whole length of the shaft might be used as a chimney, and consequently, the furnace was placed at the bottom of the upcast shaft. Natural ventilation depended on the difference of rarefaction in the columns of air in the respective shafts. The variation of temperature was perceptible at some distance below the surface, at which distance the temperature of the air was known to be equal to the average temperature at the surface during a whole year; so that in winter the column of air in the deepest shaft would be considerably heavier than that in the shallower, whilst in summer the change would be gradually, by frequent oscillations, a complete stagnation. If the airways were sufficiently large, the effect on the ventilating current, by opening doors in galleries communicating directly with downcast and upcast shafts, was not so great as most people imagined. This, of course, depended very materially on the effect of friction, and other causes, consequent on the length of the airways and the size of the upcast. Mr. Greenwell had prepared a very ingenious model with a transparency in the farthest extremity from the two shafts, through which a wax taper could be seen burning; and the effect of opening shaft doors in a downcast communicating directly with the upcast was plainly seen by the flame of the taper, the circulation of air being caused by a spirit lamp placed at the bottom of the upcast shaft. By this model, the effect of contracting the area of the upcast shaft was shown to evidently lessen the quantity of the circulating current of air; hence the necessity of large airways, and the upcast shaft being equal, if not greater, in area than that of the downcast. The lecturer remarked that carbonic acid gas was sometimes given off in considerable quantities from old workings; when one-tenth of this was the proportion of its combination with air lights would be extinguished, and although men could live in an atmosphere containing a much greater quantity, they ought never to be allowed to work where flame could not live, as it was not then easily ascertainable what quantity there might be. When a small proportion of carburetted hydrogen was in combination with the air, the flame of the lamp could be elongated; when in a very large proportion, they would burn with a pale blue flame; and when in the proportion of one-eighth or one-ninth, the mixture was explosive in the highest degree. Those who had not seen carburetted hydrogen in mines might easily collect it by inverting a bottle in a stagnant pool, and disturbing the decomposed vegetable matter at the bottom, from which it would rise, and fill the bottle. Mr. Greenwell showed by experiment the effect of carbonic acid gas on flame, and noticed the results of experiments he had made at Haswell and other collieries on carburetted hydrogen. In conclusion, he observed that the two great points in ventilation were to have large airways and large upcast shafts.

## WEEKLY LIST OF NEW PATENTS.

GRANTS OF PROVISIONAL PROTECTION FOR SIX MONTHS.—J. HAWELL, Vienna: Improvements in the construction of railway carriages, which improvements are also applicable to locomotive steam-engines.—W. E. NEWTON, Chancery-lane: Machinery for cutting metals and other hard substances.—L. WILKS, Bedford-row: Apparatus for signalling between the guards and engine-drivers on railway trains, which is also applicable to other similar purposes.—G. HARDSTAFF, Skegby Colliery, near Mansfield: Apparatus for actuating and applying the breaks of carriages used on railways and for coupling such carriages.—T. H. HARRIS, Hyde: Construction of bridges and arched structures.—J. KIRKHAM, Tonbridge-Place: New road: Construction of furnaces, ovens, or kilns, for drying, baking, or burning pottery or earthenware, bricks, tiles, or other similar articles, and in the means of collecting and condensing or carrying off the smoke, gases, or vapours evolved from such other furnaces or fireplaces, or that escape or arise from the retorts and other parts of the apparatus used in the manufacture of gas.—J. SPENCE, Brixton-road: Manufacture of artificial coral.—J. HOY, Islington: Apparatus for distributing sand on railway wheels.—W. WILKINS, Nottingham: Lighting and lamps.—A. V. NEWTON, Chancery-lane: Springs for ironing and other uses.—P. S. TAYLOR, Bathurst: Propelling vessels.—C. W. HARRISON, Woolwich: Obtaining light by electricity.—H. W. TYLER, Norfolk-crescent, Hyde Park: Permanent way of railways.—J. MURPHY, Newport: Securing screw nuts on their bolts, and bolts in plates.—E. F. JONES, Redcar: Manufacture of pig and bar-iron.—C. PAUVERT, Chatterell: Manufacturing iron: Also, manufacturing steel and cast-steel.—E. LINDNER, New York, U.S.: Cartridges and bullets, and an apparatus for producing the same.—G. W. DRAON, Tinsley, near Sheffield: Tilting iron and steel or any other malleable substance by perpendicual motion.—W. MCCA, Glasgow: Generating steam in many purposes.—H. GILFILLAN, New Palace Yard, Westminster: Mode of coupling or connecting pipes, columns, and conduits, in the machinery for manufacturing the hoops to be used in connecting such pipes, columns, and conduits, and in the shape of such pipes, columns, and conduits, whereby they become adapted for the support and conveyance of vehicles.—G. BOWEN, St. Neots, Huntingdon: Apparatus for manufacturing gas.—W. TAYLOR, Cromer: Furnaces.—B. BUTCLIFFE, J. STOKES, Birmingham: Means or apparatus in connection with steam-boiler and other furnaces to facilitate the consumption of smoke therein.—R. M. ORRIS, Regent's Park: Suspension bridges.—J. PAXES, Westminster: Apparatus for locomotive purposes.—G. A. TAYLOR, Lyons: Rotative engine.—C. SHARP, Birmingham: Improved manufacture of ship's timbers and other metallic fittings used for rigging and sails and rope gearing in general.—H. R. SMITH, Wellingborough: Manufacturing and purifying gas from coal and other bituminous substances for illumination.—A. KNOX, Mile End: Gas Regulator.

RAILWAY WHEELS.—Mr. W. Paton, Spring Vale, Glasgow, proposes to construct railway wheels composed of metal and wood combined, so as to be both durable and pleasant in working. In one modification of railway wheel, made according to this invention, the nave and spokes are of wrought-iron, forged in one piece. The arched rim, and the rim portions which they carry, are of wood. The tyre are formed with deep external flanges on one side; these edge flanges are on the side on which the tyre flange is ultimately to be placed, and with the circumferential rim portions they form a recess for a wooden rim or felloe portion which encircles the rim portions of the spokes. This wooden felloe portion is retained in position by transverse bolts, passed through the wood and through the edge flange of the felloe rim portions. The wood being put on in pieces, is clamped and bound up by an iron hoop, which is shrunk on outside the wood. The actual running tyre, which is formed with a short edge flange on its inner plain side, is then put on over the binding hoop, and this completes the wheel. The inside edge flange on the tyre protects the tyre from the lateral blows arising during running, and the whole forms a substantial and useful wheel. According to another modification, the nave and arms are of cast-iron, but the wood is interposed at the felloe portion in the manner before described.

MOTIVE POWER.—Mr. Petchler, Manchester, proposes to obtain motive power by the application of the principle of gravitation. He employs an arrangement known as internal spur or toothed gearing (that is, an inner spur wheel gearing into an outer rim which has teeth and spaces formed upon its inner surface), and each rotating upon its own centre (that is, not quite concentric with each other). A series of these wheels may be placed loosely upon a stationary shaft, upon which a heavy weight is fixed, the gravitating centre of which being somewhat eccentric, the downward pressure of the shaft (caused by the gravitating force of the weight) upon the inner spur wheel will cause the under side of its teeth to exert a pressing force upon the upper side of the internal teeth of the outer wheel upon one side of the centre, thus forcing the teeth of one side of the outer wheel down and carrying the wheel round; then upon the opposite side of the centre this action is reversed (that is, the upper part of the teeth of the inner spur wheel pass against the lower side of the internal teeth), thus lifting or raising this side of the wheel, and assisting in causing it to rotate. By connecting the toothed periphery of the outer wheel with any train of gearing any machinery required may be driven or actuated by it.

ELECTRIC TELEGRAPHS.—In our last Journal we stated that Dr. Bernstein, of Berlin, had patented an invention for transmitting telegraphic communications in the same direction, or in contrary directions, at the same time, upon one wire; and we now find that Mr. Wesson, an American, has succeeded in adapting any electric telegraph to transmit communications between railroad trains, canal boats, and all vehicles moving in an unvarying or slightly varying track. The invention consists in constructing the stationary line of a series of immovable and interposed movable conductors, and furnishing the vehicle with a circuit breaker, circuit receivers and conductors, so that the vehicle becomes a movable telegraph office.

MALLEABLE IRON DIRECT FROM THE ORE.—In the *Mining Journal* of Feb. 28, we noticed the invention of Mr. M. S. Salter, of New Jersey, U.S., for manufacturing malleable iron direct from the ore, by the employment of three chambers, one above the other, and it appears that the process has been really practically tested at Mot Haven, New York, and proved successful. Writing upon the subject, Mr. Salter reminds those who are making such unaccountable discoveries, that the grand distinction between wrought and cast-iron "consists in the property of tenacity, which the former possesses in a greater degree than any other metal, while cast-iron is brittle. Wrought-iron is fibrous, while cast-iron is destitute of fibre. Wrought-

iron is exceedingly infusible, requiring a heat of 158° of Wedgwood's pyrometer (more than 20,000° Fah.) to melt it, whilst cast-iron fuses readily at a full red heat. The malleability of wrought-iron increases up to the point indicated by the pyrometer of Wedgwood, without impairing its tenacity; hence its inestimable value."

LONDON GENERAL OMNIBUS COMPANY.—The traffic receipts for the week ending March 14 were 10,025*l.* 19*s.*

GRAISSEAC AND BEZIER'S RAILWAY COMPANY.—The shareholders are hereby informed that the COUPON OF INTEREST, due the 31st April next, will be PAID after that period—In Paris, at the offices of the company, 45, Rue Talbott.—In London, at Messrs. C. Devaux and Co., 62, King William-street, City. London, March 16, 1857.

TO CAPITALISTS, AND OTHERS INTERESTED IN MINING.—To be sold, or worked in company, an extensive and RICH GOLD FIELD, having a plentiful supply of water and timber; in an excellent climate, situated in New Granada, South America, which has cost the owner thereof £2583 sterling. A working capital of £500 will put the property in full order, and make the first washing! This being a bona fide concern applicants will please give proper addresses, without which no notice will be taken. Address "Pagarita," *Mining Journal* Office, 26, Fleet-street, London.

LEATHER MILL BANDS, HOSE PIPES, BUCKETS, &c.—RAILWAY COMPANIES, ENGINEERS, CONTRACTORS, and BUILDERS, can be SUPPLIED with the above articles of the very best quality, and on the shortest notice. PUMP BUTTS, and every other description of leather always on hand.—Apply to J. HOLGATE and Co., curriers and leather merchants, 33, Great Dover-road, London, S.E. WHOLESALE HARNESSE MANUFACTURERS.

RAILWAY WAGONS.—TO BE LET, on reasonable terms, a QUANTITY of 6 tons RAILWAY WAGONS.—For particulars, apply to Mr. THOS. NUSS, Wellington Chambers, Cannon-street West, London.

GREAT CRINNIS MINING COMPANY.—Notice is hereby given, that a CALL OF ONE SHILLING per share, on the NEW SHARES of this company, has been made, payable on Tuesday, the 31st March inst., at the offices of the company, 47, Old Broad-street, London, March 19, 1857.

TAMAR SILVER-LEAD MINING COMPANY.—Notice is hereby given, that a SPECIAL GENERAL MEETING of shareholders in this company will be HELD at the offices of the company, 17, Gresham-street East, London, on Tuesday, the 24th day of March next, at Two o'clock precisely.

TRELEIGH CONSOLIDATED MINING COMPANY.—Notice is hereby given, that the ADJOURNED MEETING, called for Tuesday, the 24th inst., has been FURTHER ADJOURNED until Thursday, the 26th day of March next, at Two o'clock precisely. WM. NICHOLSON, Sec.

LINEARES LEAD MINING COMPANY.—Notice is hereby given, that, in conformity with the Deed of Settlement, the HALF-YEARLY GENERAL MEETING of the shareholders in this company will be HELD at the London Tavern, Bishopsgate-street, on Tuesday, the 31st inst., at Twelve o'clock, to receive the accounts and balance-sheet, with reports from the directors and auditors, for the half-year ending 31st December, 1856; to elect three directors in the place of James Crosby, W. Cox, and W. L. Lowndes, Esqrs., who go out of office by rotation, but who are eligible, and offer themselves for re-election; to appoint two auditors for the ensuing year, Thomas Coxhead and Henry Blackley, Esqrs., are eligible, and again offer themselves for re-election; and for general business, as authorised by the Deed of Settlement. By order of the Board, J. B. COLOGAN, Sec.

NEW GRANADA COMPANY.—Notice is hereby given, that the FIFTH ORDINARY GENERAL MEETING of the company will be HELD at the offices of the company, 6, Adam's-court, Old Broad-street, on Tuesday, the 31st inst., at One o'clock in the afternoon, for the purpose of submitting the accounts, balance-sheet, and reports of the directors and auditors, for the year ending 31st December last, to the shareholders for approval. On this occasion, Charles Johnston, Esq., and George Knight Huxley, Esq., retire by rotation from the direction, and offer themselves for re-election. The meeting will also have to elect two auditors for the ensuing year; and transact such other business as is appointed by the Deed of Settlement to be transacted at ordinary meetings of the said company. By order of the Board, GEORGE E. BREFFIT, Sec.

THE LUSITANIAN MINING COMPANY (LIMITED).—Notice is hereby given, that, in accordance with the Deed of Settlement, the THIRD ANNUAL GENERAL MEETING of shareholders in this company will be HELD at the offices of the company, 5, Queen-street-place, Upper Thames-street, London, on Wednesday, the 1st day of April next, at Half-past Twelve o'clock precisely, to receive the report and accounts for the year ending 31st December, 1856. Also, to elect four directors, in the place of Manuel Perez Lozano, Esq.; Jose Maria Perez, Esq.; John Taylor, Jun., Esq.; and Richard Taylor, Esq.; who go out of office by rotation, but who are eligible, and offer themselves for re-election. And also to appoint an auditor, in the place of John White Cater, Esq., who has resigned. London, March 18, 1857. By order of the Board, W. A. HART, Sec.

THE LONDON AND VIRGINIA GOLD AND COPPER MINING COMPANY.—Notice is hereby given, that the Board of Directors have, with the assent of the Adjourned Extraordinary General Meeting of stockholders, held on the 24th ult., made TWO CALLS, one of a SHILLING per share, payable on Monday, the 6th of April next, and the other of a SHILLING per share, payable on Monday, the 6th of July next; making 1*l.* 1*s.* per share called up. The stockholders are, therefore, requested to pay, on or before these dates, to Messrs. Barnett, Hoare, Barnett, and Co., 62, Lombard-street, London, the bankers of the company, the amount payable on their respective shares. Discount at the rate of 6 per cent. per annum will be returned on application to the secretary, in respect of payments made in advance; and interest at the rate of 10 per cent. per annum will be charged on sums not paid when due. In default of payment, the directors will proceed to forfeit the shares without delay. By order of the Board of Directors, JOHN A. DERSON, Sec.

Office of the Company, 34, Lime-street, London, March 18, 1857.

## CORT'S TESTIMONIAL FUND.

Rev. JAMES BOOTH, LL.D., F.R.S.—CHAIRMAN.

WILLIAM B. CARPENTER, M.D., F.R.S., F.G.S.

EDWARD SOLLY, Esq., F.R.S.

EDWARD REA, Esq., F.S.A.

SUBSCRIPTION LIST.

From the Royal Bounty Fund, by Lord Palmerston	500 0 0
Anthony Hill, Esq., Plymouth Works, Wales	30 0 0
George A. Crowder, Esq., Carlton House Terrace	25 0 0
Edwin Wilson, Esq., 10, Pall Mall	20 0 0
Robert Stephenson, Esq.	15 0 0
J. K. Brunel, Esq., F.R.S.	15 0 0
James Stephen Wickens, Esq.	15 0 0
Blaine Coalbrook Vale Iron Company	10 0 0
Marquis of Lansdowne, F.R.S.	10 0 0
Miss Barrett Countess	10 0 0
Richard Fothergill, Esq., Aberdare Iron works	10 0 0
Rhymer Iron Company	10 0 0
B. W. Kennard, Esq., Blaenavon Iron Company	10 0 0
W. Foreman, Esq., Pen y ddarran Iron Company	10 0 0
Low Moor Iron Company, Yorkshire	10 0 0
Philip Williams and Son, Wexley Oak Ironworks	10 0 0
John Bagnall and Sons, Goodhill Ironworks	10 0 0
John Dawes and Sons, Bromford Ironworks	10 0 0
J. H. Bradwell, Esq., Ironworks, Dudley	10 0 0
John Braderly and Co. per W. O. Foster, Stourbridge	10 0 0
G. B. Thorneycroft and Co. Iron works, Wolverhampton	10 0 0
J. and E. Walker, Gosport Oak Ironworks	10 0 0
Barrows and Hall, Bloomfield Ironworks	10 0 0
Coalbrook Dale Iron Company, Shropshire	10 0 0
Miner and Son, Iron Safe Works, Liverpool	10 0 0
G. Bessemer, Esq.	10 0 0
Samuel Brown, Esq., Clifton Hall	10 0 0
Maudslay and Field	10 0 0
Charles Mathews, Esq., Corby Hall Ironworks	5 0 0
Brown and Freer, Iron works, Stourbridge	5 0 0
G. B. Firmstone, Iron works, Stourbridge	5 0 0
W. Byrno Iron Company, Denbighshire	5 0 0
Derwent Iron Company, Neth	5 0 0
John Knight and Co. Cookley Ironworks, Kidderminster	5 0 0
W. B. Cochrane and Co. Ironworks, Woodside	5 0 0
Horton and Son, engineers	5 0 0
Ransom and Sims, Ipswich	5 0 0
Clayton and Shuttleworth, engineers	5 0 0
Samuda Brothers	5 0 0
F. C. Ravenhill	5 0 0
J. G. Berkenhaw	5 0 0
Easton and Amos	5 0 0
Daniel and Co. Thames-street	5 0 0
Executors of the late James Meadows Rendel, F.R.S.	5 0 0
Robert Maughan, Esq., Secretary to the Law Institution	5 0 0
Thomas Baring, Esq., M.P.	5 0 0
Charles Sanderson, Esq., Sheffield	5 0 0
Henry E. Hoole, Esq., M.P.	5 0 0
William Fairbairn, Esq., F.R.S.	5 0 0
R. Middleton, Esq., <i>Mining Journal</i>	5 0 0

Subscriptions payable at the banking house of Sir John W. Lubbock, Bart.

## TO THE IRON MANUFACTURING, MINING, AND ENGINEERING INTERESTS.

GENTLEMEN.—I have to request that you will allow me to add the name of your firm to the above list to defray the expenses of an appeal to Parliament, for some adequate national compensation for the inventions of Henry Cort, which have enabled the manufacturing and engineering classes in Great Britain to contribute so largely to the wealth and power of the nation.—I am, respectfully, gentlemen, your most obedient servant.

*Mining Journal* Office, 26, Fleet-street, London, March 10, 1857.

N.B. The Specifications of Henry Cort's Patents may be had at the Patent Office, Southampton-buildings, Chancery-lane, for 7*d.*: A.D. 1783, No. 1351, for grooved-rollers, piling, and heating; A.D. 1784, No. 1430, for puddling and boiling.

PURSUANT to a DECREE of the HIGH COURT OF CHANCERY, made in a Cause of ROBERT SHEPPARD, on behalf of himself and all other the shareholders in the partnership or association called the NATIONAL BRAZILIAN MINING ASSOCIATION, hereinafter mentioned, except the defendant hereinafter named plaintiff, and EDWARD ORENFORD, defendant, ALL PERSONS BEING OR CLAIMING to be SHAREHOLDERS in the Partnership or Association called the NATIONAL BRAZILIAN MINING ASSOCIATION, are, by their solicitors, on or before the 15th day of April, 1857, to COME IN and PROVE THEIR CLAIMS at the Chambers of the Vice-Chancellor Sir WILLIAM PAGE WOOD, at No. 11, New-square, Lincoln's Inn, Middlesex, or in default thereof they will be peremptorily excluded from the benefit of the said Decree. Monday, the 30th day of April, 1857, at Twelve o'clock at noon, at the said Chambers, is appointed for hearing and adjudicating upon the claims.

HUGHES, KEARSEY, MASTERMAN, AND HUGHES, 17, Bucklersbury, London, Plaintiff's Solicitors. Dated this 16th day of March, 1857.

PURSUANT to a DECREE of the HIGH COURT OF CHANCERY, made in a Cause of ROBERT SHEPPARD, on behalf of himself and all other the shareholders in the partnership or association called the NATIONAL BRAZILIAN MINING ASSOCIATION, hereinafter mentioned, except the defendant hereinafter named plaintiff, and EDWARD ORENFORD, defendant, ALL PERSONS BEING OR CLAIMING to be SHAREHOLDERS in the Partnership or Association called the NATIONAL BRAZILIAN MINING ASSOCIATION, are, by their solicitors, on or before the 15th day of April, 1857, to COME IN and ESTABLISH THEIR CLAIMS at the chambers of the Vice-Chancellor Sir WILLIAM PAGE WOOD, at No. 11, New-square, Lincoln's Inn, Middlesex, or in default thereof they will be peremptorily excluded from the benefit of the said Decree.—Monday, the 30th day of April, 1857, at 12 o'clock at noon, at the said chambers, is appointed for hearing and adjudicating upon the claims.

HUGHES, KEARSEY, MASTERMAN, AND HUGHES, 17, Bucklersbury, London, Plaintiff's Solicitors. Dated this 16th day of March, 1857.

S. AUSTELL CONSOLS.—The OFFICES of this MINE are REMOVED to No. 10, BASINGHALL STREET, CITY, E.C.

March 18, 1857. SAMUEL HEATH, Jun., Sec.

SOUTH TAMAR CONSOLS MINE.—ALL PERSONS having CLAIMS AGAINST this MINE are requested to SEND them to me, on or before the 31st inst., in order that they may be examined and forwarded to the secretary for payment. As the assets of the company are about to be divided, it is absolutely necessary that these claims should be sent in on or before the time named, as there will be no funds afterwards for their settlement.

Plymouth, March 17, 1857. JAMES WOLFESEAN.

THE CWM EIGIA QUARRY SLATE AND SLAB COMPANY (LIMITED).—Notice is hereby given, that ALL OUTSTANDING SCRIP FOR SHARES in the company must be forthwith SENT IN FOR EXCHANGE for SEALED SHARE CERTIFICATES; and that any scrip not so sent in by the 4th day of April next will be liable to forfeiture.

By order of the Board, W. F. NOKES, Sec.

Dated this 16th day of March, 1857, 11, George-yard, Lombard-street.

THE CWM EIGIA QUARRY SLATE AND SLAB COMPANY (LIMITED).—Notice is hereby given, that a FURTHER CALL of THREE SHILLINGS per share has been this day made on the shares of this company, payable on the 1st day of April next, and on the 4th day of April, the 1st day of May, and the 1st day of June next respectively, to the account of the company with the Bank of London, Threadneedle-street.

By order of the Board, W. F. NOKES, Sec.

Dated this 16th day of March, 1857, 11, George-yard, Lombard-street.

N.B. In case of non-payment on the days specified, interest is payable at 4*s.* per cent., and the shares are liable to forfeiture.

OKHAMPTON MINING COMPANY (LIMITED).

Now in course of registration under Act 19 and 20 Vict. c. 47.

Capital, £10,000, in 10,000 shares of 1*l.* each.—Deposit, 10*s.* per share.

Mr. EDWIN PEARSON, Bart., 7, Chester-terrace, Regent's-park.

JOHN F. WILLIAMS, Esq. (F. McNeill and Co.), Bunhill-row.

STEPHEN J. GREEN, Esq., 72, Old Broad-street.

J. DUNNINGTON FLETCHER, Esq., 12, Westbourne-terrace, Hyde-park.

Major D. FREEMAN, D.L. and J.P., 47, Queen's-road, Notting-hill.

BANKERS.—The Bank of London.

SOLICITOR.—George Ogilby, Esq., 4, Great Winchester-street.

SECRETARY.—Mr. Henry Peet.

OFFICES.—20, ST. HELEN'S PLACE, BISHOPSGATE STREET, LONDON.

PROSPECTUS.

This company is formed for the purpose of more extensively working the Okhampton Consols Mines, situated about one mile from Okhampton, in the county of Devon. The site comprises a great extent of ground, about two miles on the course of the lode. The lease is for 21 years from January, 1854, and the royalty 1-15th of the produce.

The company has been hitherto conducted under the Cost-book Principle, in 5000 shares, upon which 10*s.* per share has been paid; and the amount called up has been expended in the erection of powerful machinery, and all the necessary buildings and plant of the most substantial character. An engine-shaft has been sunk upwards of 21 fms., and other work done, as detailed in the manager's report.

At a special meeting of shareholders, recently held, it was determined—for the purpose of raising further capital, and limiting their liability—to increase the number of shares to 10,000, and bring the company within the provisions of the Joint-Stock Companies Act of 1856, with limited liability. This extra capital now called up, it is considered, will develop the mine to a depth of 40 fms.; and, if attention is paid to the reports, it may be fairly assumed that large returns may be made when that point is attained.

With respect to the property itself, it would be hardly possible at this stage of the workings to find anything more favourable, both as regards the promise of great mineral riches, and the facilities and cheapness with which the lode may be developed.

The mines have been surveyed by some of the most eminent practical agents in Devon and Cornwall—men of reputation and position—and whose reports will afford very ample information as to the general character, prospects, and probable value of the property. Indeed, it will be best shown in these reports that this undertaking is not only one of an unusually tempting character, and a decidedly safe one, but also that it can hardly fail to result in a permanently profitable investment. [The full reports may be had at the office.]

Further introductory remarks are unnecessary, but in enumerating the agents who so strongly commend this valuable concern, their prominent recommendations may be consistently be referred to.

Mr. JOSEPH H. HITCHIN (under whose auspices the Devon Great Consolidated Mines were opened) considers the lode principally opened on as "presenting unusually good prospects of success;" and that altogether considered, the lode "may fearfully be extolled as being one of a very extraordinary and tempting character, and more than likely to make very great deposits of lead ore, at no great depth below the present adit level; and the chances are in favour of 'Okhampton Consols' becoming a very great, good, and enduring lead mine."

Capt. JAMES PHILLIPS, of Bedford United Mines, who is proverbially a careful agent in estimating the value of mines, says:—"The site is two miles square, with a large river running through it, capable of working very powerful machinery for all the purposes of the mine, so that the advantages presented here for working are very seldom equalled. The lode opened on is 10 ft. wide, composed of excellent gossan and quartz, and carrying a good flood in a mineralised channel of ground, and an elvan course on the eastern side, which is a very favourable indication. A more promising lode in this drive is but rarely seen. My opinion is, if the mine is fairly carried out, good profits will be the result, and it is a real good speculation for capitalists to enter into."

Capt. W. GLOUCESTER, an Agent of Devon Great Consols, in whom great confidence may be placed, describes the stratification as a "beautiful channel of highly mineralised ground," and the lode opened on as a "really magnificent lode, such as is very rarely seen. The new and substantial machinery is in every way calculated to give the mine a full trial, and the water-power is of incalculable advantage to the company in the prosecution of their property. I believe the time is not far distant when the mine will become a valuable and lasting property!"

Capt. S. MITCHELL, of Colacoube Mine, is also an agent whose practical experience commands his opinion to great credit. He says:—"In the great lode opened on there is an abundance of very fine lead gossan, congealed quartz, and murel; the stratum surrounding it is of the same general character as is usually found to accompany productive lead lodes; and, from the highly promising appearance of the lode, I believe very large quantities of lead ore will be raised in this mine at a reasonable depth. The machinery and buildings are completed in a very economical and substantial manner, and reflect great credit on the manager. From the highly promising indications which this mine presents, I fully believe that the most sanguine expectations are being realised, in its becoming a very lasting and valuable property; and it is, certainly, one of the best lead speculations I have ever seen."

Capt. JOHN GOLDSWORTHY, of Great Trevinnick Silver-Lead and Antimony Mine, having paid considerable attention to lead indications, says:—"This lode is of the greatest promise in character, and has the appearance of producing immense quantities of lead ore; it is of the most encouraging nature as a lead gossan lode that I ever saw in my life. The lode passes for upwards of 400 fms. north of the shaft in a flat valley, where there is but little doubt of a large deposit of lead; I have, therefore, no hesitation in expressing my opinion, that if the mine is properly carried out the results will be to a most profitable account."

Capt. T. RICHARDS, of Liskeard, an agent, of most independent character, and possessing some judgment, writes:—"This gossan is of the very best description, and the lode presents a very magnificent appearance indeed. I believe, with very great confidence, that as large a quantity of lead ore will be raised from this mine as ever was realised in any mine in Devon or Cornwall. Finally, I have no hesitation in saying that this is one of the most certain speculations I ever saw."

Capt. SAMUEL SECOMBE, manager of the Phoenix Mines, says:—"The sett is very extensive, and possesses considerable advantages for exploring the different lodes in depth, and throughout the drive of the lode principally opened on, the indications are of a very flattering character, and well deserve the outlay of the required capital."

Capt. JAMES RICHARDS, chief agent of the Devon Great Consols Mines, very positively states, that "the indications are of the finest character possible, and the lode altogether presents such an appearance as I have rarely had an opportunity of witnessing; and I have seldom, if ever, inspected a lead lode of this size presenting such good prospects. The southern copper lode is also of extraordinary promise, and will undoubtedly prove a great value."

Capt. HOSKING, who has had great experience as a mineral inspector, fully describes the advantages of the property, and continues:—"The stratum is extremely congenial for lead ore, and my opinion is, that large deposits of that mineral will be met with; and I am fully persuaded that with a moderate outlay of capital this mine will be quickly brought to a dividend state."

Capt. JOHN GILBERT, after expressing the most favourable opinion of the property generally, says, with respect to the lode opened on, "I cannot



**GREAT WHEEL NEPTUNE COPPER MINE, MARAZON, CORNWALL.**—Capital, £15,000, in 6000 shares of £2 10s. each. Deposit, or first payment, £1 5s. per share. Applications for shares to be forwarded to the promoter, in the form annexed. Committee of management to be chosen by the shareholders, and the mine to be conducted under the most approved mining rules and regulations.

**PROMOTER.**—A. BENNETT, Marazion, Cornwall.

**BANKERS.**—Messrs. Bolitho and Co., Penzance.

This mine is situated in the parish of Perran Uthnoe, and comprises a very extensive tract, which is upwards of a mile in length on the course of several lodes, and has been granted to the promoters by the lords over whose lands it extends at 1-16th duty, or royalty, for the terms of twenty-one years, and upon the usual conditions.

The following facts are deemed ample evidence that the mine is of great value, and one from which extraordinary results may be reasonably expected; and it is offered to the public in order that it may forthwith be set again to work.

About the year 1810, the principal lode in the mine was discovered by an adit commenced from the cliff, and in less than twelve months afterwards, with an outlay of only about £2000, it paid large profits out of the ore raised from this lode only—a remarkable circumstance in mining.

During the time the mine worked, a period of somewhere about ten years, the output of ore from the before-mentioned lode, amounting to £250,000 to £300,000, out of which the adventurers received large dividends, notwithstanding the standard of copper was only about two-thirds of what it is at present, and has been for some time past—and the dues were then double what they now are.

The mine was suspended, or partially so, in or about 1820, in consequence of disputes between the shareholders and one of the then lords (whose successor has shown his desire to encourage the adventure by granting mining rights in his lands), which ended in a chancery suit, and eventually caused the mine to be abandoned; and it has since remained idle on account of difficulties in procuring the grant.

The ore returned from this mine was of the very richest quality, and had that peculiar character for ductility in the metal it produced which makes ores of that nature now so much needed and sought after by smelters, by reason of the disproportion of ores of an opposite kind.

The adit and several shafts have already been cleared up, and are now fit for immediate operations; and what has been done towards opening and developing the mine, with a view to resuming the working of it, would take at least three years to accomplish, and an outlay of several thousand pounds.

The company will have the benefit of all which has been done in the mine, together with the grants, for £300.

The promoters estimate that in a very short time, with a comparatively trifling outlay, and good management, the mine may be brought into a state of productive-ness, as a considerable quantity of ore ground remains to be taken away on tribute, as soon as the water is pumped out.

It may be added that this mine adjoins Wheal Charlotte, and Tolvaidden Mines, in which very valuable discoveries have recently been made, also, that it is only about two miles from the shipping port of St. Michael's Mount, which will make the carriage of ore very trifling.

#### FORM OF APPLICATION FOR SHARES.

To the Promoters of the Great Wheel Neptune Copper Mining Company. GENTLEMEN, I hereby request you to allot to me shares in this adventure, which, or any less number that may be allotted to me, I hereby agree to accept; and I also agree immediately thereupon to pay the deposit, or first payment, of £1 5s. per share to the bankers or purser of the company, and to conform to and be bound by the rules and regulations of the company, and to subscribe thereto, if required.

Dated the \_\_\_\_\_ day of 1857. Name in full \_\_\_\_\_ Address \_\_\_\_\_ Profession or occupation \_\_\_\_\_

#### NORTH OF INDIA TRAMROAD COMPANY (LIMITED).

For introducing a cheap system of communication throughout the Province of Rohilund and adjacent territory, connecting the Ganges with the Indus, and also with the iron districts of Kumaon and Gurhwal, via Puteeghur, Shahjehanpur, Bareilly, Rampoor, Moradabad, Meerut, Saharunpur, Umballah, Ludhiana, and Umritsar.—To be incorporated under the Joint-Stock Companies Act, 1856.

Capital, £1,000,000, in 50,000 shares of £20 each, with power to increase.

No call will be made until a guarantee rate of interest has been obtained from the East India Company on the required capital.

**DIRECTORS.**

W. P. ANDREW, Esq., F.R.S.G., Chairman of the Scinde Railway Co.—CHAIRMAN.

Sir H. MADDOCK, M.P., late Deputy-Governor of Bengal—DEPUTY-CHAIRMAN.

PHILIP ANSTRUTHER, Esq., Director of the Bank of Egypt.

HARRY BORDDALE, Esq., Director of the Scinde and Punjab Railway Cos.

THEOS. BRADSHAW, Esq., Chairman of the London and Continental Insurance Co.

W. F. FERGUSSON, Esq., Eastern Bengal Railway Company.

Colonel GLASFORD, late Executive Engineer of Rohilund.

G. GREVILLE MANSEL, Esq., late Member of Board of Administration, Punjab.

G. GORDON MACPHERSON, Esq., Director of the Agra and United Service Bank.

W. SHILLITO, Esq., H.E.I.C. Bengal Establishment.

E. WARNER, Esq., M.P., Grosvener-place, Director of National Discount Company.

J. W. WILLIAMSON, Esq., Chairman of the National Savings Bank.

(With power to add to their number.)

CONSULTING ENGINEER.—John Murray, Esq., C.E.

ACTING ENGINEER IN INDIA.—W. Sowerby, Esq., C.E.

**SOLICITORS.**—Messrs. Lyons, Barnes, and Ellis; Messrs. Marten, Thomas, and Hollams.

**BANKERS.**—Messrs. Smith, Payne, and Smith; the Agra and United Service Bank.

**SECRETARY.**—George L. Browne, Esq.

#### TEMPORARY OFFICES.—6, ADAMS COURT, OLD BROAD STREET.

The object of this company is the introduction of a system of tramroads into the most fertile and populous districts of Northern India, commencing at the station of Puteeghur, and running thence through the province of Rohilund, the "Garden of India," containing a population of above 300 persons to the square mile.

From Puteeghur it will proceed in a northerly direction to Shahjehanpur, and thence to Bareilly, the capital of Rohilund, with a branch to Pilibhet, and ultimately to Bharduad, at the foot of the Himalayas, where the merchants of Nepal, Tibet, and Chinese Tartary, meet those of Upper and Lower India, for the exchange of their commodities.

From Bareilly the line will continue in a westerly direction to Rampoor and Moradabad, and thence to Meerut, and ultimately to Delhi.

The importance of this line will be best understood from the fact that it has already been examined and reported on by the Deputy-Consulting Engineer to the Government of India, Captain Yule, and its construction urged by the authorities of the province.

In reference to this, Captain Yule says in his report, "A complete line of railway, extending from Shahjehanpur, would then connect, in a space of 170 miles, the town of Shahjehanpur (with a population of 75,000), Bareilly (112,000), Rampoor (probably 30,000), Moradabad (60,000), Umroha (35,000), Meerut (40,000), and 40 miles further, Delhi (132,000)—a string of populous places which is rarely to be found in the same compass.

Subsequently, it is proposed to extend it in a north-westerly direction by way of Mousafurrugger and Saharunpur to the great military station of Umballah, with a branch by the Government works at Roorkee to Hurdwar, the Nishal Norgord of India. At the celebrated fair of Hurdwar merchants congregate, not only from every part of India, but from the most distant parts of Central and Northern Asia, and in such crowds that the number of visitors is estimated, at times, to equal the population of London. The line to Hurdwar would also be the great communication between India and the western part of Tibet, as well as an outlet for the tea of Dehra Doon, and the timber of the lowest Himalayas. From Umballah, the line will continue north-west through Ludhiana to Umritsar, where it will join the Punjab Railway: thus connecting the railway systems of the Indus and the Ganges.

Southward from Shahjehanpur, should it eventually be deemed desirable by the authorities, the line would run through the recently acquired territory of Oude via Lucknow to Benares, where the Ganges is perennially deep, and capable of floating powerful steamers, even in the driest season, down to Rajmahal. Thus, an alternative line would be offered for the conveyance of troops and stores to the north-west frontier, a strategic advantage of which it is difficult to exaggerate the political importance.

Such portions of the line as are required for heavy traffic will be formed of a substantial character. It has been estimated that the cost of constructing no portion will exceed £5000 per mile, and a large portion will not exceed one-half that amount.

The first portion of the line intended to be constructed will be about 250 miles, namely, from Puteeghur to Delhi via Shahjehanpur, Bareilly, and Moradabad. For the completion of this section the estimated capital will be sufficient.

The system intended to be introduced will be more suitable to the actual requirements of the country than lines costing £2000 to £10,000 per mile. The present rate of travelling in India by camels and carts seldom amounts to 80 miles per week. If, therefore, 80 miles per day can be accomplished, it is obvious how great a boon will be conferred upon India. Of such a system this line would be not only the model, but the fruitful parent. By establishing a connection with the iron districts, and by its inexpensive construction developing local traffic in parts unfitted for more costly works, it would not only act as a most important and liberal feeder to the lines already in course of construction, but bring down to them, at a cheap rate, much of the material so indispensable for their speedy completion.

Animal power will be employed in the first instance, until the traffic becomes more developed. "A horse," says Capt. Yule, "can draw at least eight times as much gross weight on a level railway as it can on a level turnpike road." But as the traffic increases, light locomotives may be used, with a moderate speed. Some portions of the line, however, will be adapted for light locomotives from the commencement.

The construction of the tramroad will be rendered very cheap by reason of the facility for drawing timber in any quantity from the adjacent forests at the foot of the Himalayas, and ultimately the company expect to obtain a large portion of their iron rails, at a reduction of one-half the present cost, from the recently discovered iron mines of Kumaon, where iron works have been already commenced. But the estimates for the line have in the mean time been based upon the supposition that the iron will have to be brought out from England.

The company hope to complete the line, recommended by the deputy consulting engineer to the Government of India, from Puteeghur through Shahjehanpur, Bareilly, Rampoor, Moradabad, and Meerut, to Delhi, in about three or four years from the time of obtaining the sanction of the authorities.

No deed is required to be signed until the concession, with the guaranteed rate of interest on the capital, has been obtained from the Hon. East India Company.

#### FORM OF APPLICATION FOR SHARES.

To the Directors of the North of India Tramroad Company (limited). I request you will allot to me shares in the capital of the above-named company, and I hereby engage to accept the same, or any less number, on the terms of the prospectus.

Name in full \_\_\_\_\_ Occupation \_\_\_\_\_ Address and date \_\_\_\_\_

**MESSRS. FULLER AND CO., 51, THREADNEEDLE STREET, LONDON,** continue to TRANSACT BUSINESS in BANKING, MINING (both English and Foreign), RAILWAY, and every description of SECURITIES; and are in a position to BUY and SELL at the market price of the day.

The present favourable opportunity to capitalists command especial attention to mines, which are paying continuous dividends of from 15 to 25 per cent. Those of a progressive character, judiciously selected, frequently rising in value 50 per cent., and upwards.

**WANTED.**—Alfred Consols, Bedford United, Conduwour, Devon Great Consols, Gossamer, Kingston Down, Great Wheel Vor, Rhoswydol, Providence, South Box, South Caradon, South Wh. Frances, Wh. Trelawny, Mary Ann, West Nant-y-Mwyn. FOR SALE.—Bedford Consols, Drake Walls, Dyffwng, Clijah and Wentworth, Calstock Consols, Cradock Moor, East Russell, Gawton, Lady Bertha, Wh. Edward, West Russell, West Caradon. Office hours from Ten till Five o'clock.

#### In the Court of Vice-Wardens of the Stannaries.—Stannaries of Cornwall.

##### IN THE CAUSE OF MILLET AND ANOTHER V. ANGOVE.

**NOTICE IS HEREBY GIVEN,** that, pursuant to an ORDER, or DECREE, made in the above-mentioned Cause, and bearing date the 8th day of January last, a PUBLIC AUCTION will be HELD at WHEEL NEELSON MINE, in the parish of Camborne, within the said Stannaries, on Thursday, the 26th day of March inst., at Twelve o'clock at noon, for SELLING, either together or in lots, the undermentioned MINING MACHINERY, MATERIALS, and OTHER EFFECTS:

1 22 in. cylinder engine.  
1 boiler, 10 tons.  
1 capstan, 1 shears.  
22 horse whims.  
44 fms. 11 in. plunging-lift.  
15 fms. 5 in. plunging-lift.  
12 fms. 10 in. drawing-lift.  
16 fms. 4 in. drawing-lift.  
60 fms. 8 in. main rods.  
2 balance-bobs.  
1 smith's bellows, 1 anvil, 1 vice and screw stock, about 3 cwt. smith's tools, 1 winch.  
2 pairs beams and scales, ½ cwt. brass  
150 fms. horse-whim chain.  
60 fms. capstan-chain.  
4 horse-whim kibble.  
6 hand and wheelbarrows.

4 cwt. tallow; 12 gallons rape oil; 60 powder cans; 1 cwt. powder; 20 coils safety fuse; 70 lbs. candles; lot of old rope; about 2 cwt. steel; about 100 ft. balk timber; 1 tram wagon, and 15 fms. tramway; 180 fms. ladders; shovels and pick hilt; carpenter's bench; grindstone; miners' chests; miners' tools; a quantity of new and old iron; and a variety of other materials and effects.

For viewing the same, application may be made to Mr. WILLIAM TOWN, the officer in possession of the mine; and for further particulars, to Messrs. ROWN, DARRK, and COXWELL, Solicitors, Penzance; or to Messrs. HODGKIN and HODGKIN, solicitors, Truro. Dated Registrar's Office, Truro, March 14, 1857.

#### IN RE ROYAL BRITISH BANK.

**MESSRS. FULLER AND HORSEY** are instructed by the Assignees to SELL, BY AUCTION, at the Wyndham Arms Hotel, Bridgend, Glamorgan-shire, on Saturday, the 4th April, 1857, at Three o'clock precisely, without any reserve, THREE WROUGHT-IRON CORNISH STEAM BOILERS, each 28 feet long, 9 ft. 6 in. diameter, with 4 ft. tapering tubes, 4 in. steam valves, 10 in. flanged steam valves, and furnace work, in excellent condition; lying at the Garth Ironworks, in the Llynvi Valley, a few miles from Bridgend. May be seen at any time previous to the sale.

Catalogues may be had at the Wyndham Arms, Bridgend; at the Castle Hotel, Swansea; at the Angel, Cardiff; and of Messrs. FULLER and HORSEY, Billiter-street, London, E.C.

#### EXETER.—TO IRONFOUNDERS.

**MESSRS. WARE AND SON** have received instructions from the Executors of the late Mr. James Northam to SELL, BY AUCTION, at the Half Moon Hotel, on Tuesday, the 14th day of April next, at Three o'clock in the afternoon, in One Lot, all that well-known and old-established IRON FOUNDRY, called NORTHAM'S FOUNDRY, situate in the Commercial-road, St. Mary Steps, Exeter, with the DWELLING-HOUSE and FOUR COTTAGES adjoining, STOCK-IN-TRADE, IMPLEMENTS, and MACHINERY in and about the premises, a POLICY OF ASSURANCE for £600, together with the GOODWILL of the BUSINESS. The foundry and buildings are held for the residue of a term of 99 years, from the 20th day of June, 1821, determinable on the death of a life aged 45 years or thereabouts (on which the above policy is effected), subject to the yearly rent of £20. The iron and brass foundry business has been upwards of 50 years carried on here by the late Mr. Northam, and now offers a good opportunity to persons engaged in the trade. There is a good and steady business, capable of great extension, and the foundry is in one of the best situations in Exeter. If not sold in one lot, the property will be divided.—Further particulars may be obtained of Mr. TUCKER, at the foundry; of the auctioneers, Paris-street; or of Messrs. PAUL and JAMES, solicitors and proctor, The Close, Exeter.—March 10, 1857.

#### PULSTRONG RESIDENCE AND FARMS FOR SALE.

**MR. WM. RICHARDS,** Auctioneer, Penzance, begs to announce that he has been favoured with instructions to SUBMIT FOR SALE, BY AUCTION, at the Commercial Hotel, in Camborne, on Saturday, the 28th of March inst., at Two o'clock in the afternoon, all that very desirable RESIDENCE, with the STABLES, COACH-HOUSE, and other OUTBUILDINGS attached thereto, together with the SHRUBBERY, WALLED GARDENS, and ORCHARD belonging, called PULSTRONG, situate in the parish of Camborne, in Cornwall, now in the occupation of Mr. Thomas Richards, who will quit the same at Midsummer next, and which contains, by a recent survey and measurement, 3A. 3A. 27P., statute measure, and is held for the residue of a term of 99 years, now determinable by the deaths of three living, aged 17, 15, and 14 years, under the yearly conveyance rent of £10, and subject to a heriot of £1 on the death of each of the said lives.

The whole is at present occupied by the name of PULSTRONG FARM, adjoining the town, comprising a convenient farm-house, with stables, barn, cattle houses, straw yards, and outbuildings of every description, the same having been recently erected by the proprietor, A. W. Ritson, Esq., at a very considerable expense; and arable, meadow, and pasture land, containing in the whole, by a recent survey and measurement, 104A. 2A. 16P., statute measure. Together with a TENEMENT held therewith, called NOON GAY, in the said parish of Camborne, containing, by a recent survey and measurement, 3A. 3A. 26P. of arable and pasture land, which said farm and tenement are held for the residue of a similar term of 99 years, determinable by the deaths of the same three lives, under the yearly conveyance rent of £20, and subject to a heriot of £1 10s., payable on the death of each of such lives.

Also, all those several FIELDS lying north and south of the turnpike-road leading from Camborne to Hayle, and adjoining Pulstrong Farm, being part of Treawith Downs, in the said parish of Camborne, containing about 15 acres, statute measure, of arable and pasture land, and which is held for the residue of a similar term of 99 years, determinable by the deaths of the same three lives, under the yearly conveyance rent, and subject to the heriot on the death of each of such lives, which will be named at the auction.

The whole is now occupied as one farm, and is in the occupation of Mr. James Bennett, at the yearly rent of £190, for a term of 7 or 14 years from Lady-Day last.

The residence is most substantially built, and contains a dining-room 21 ft. by 15 ft., drawing-room 21 ft. by 18 ft. (with a large conservatory entered from the drawing-room), breakfast-room, library, seven best bedrooms, three servants' bedrooms, kitchen, scullery, excellent wine and beer cellars, laundry, water-closets, and every convenience for the residence and comfort of a large family. The gardens are well stocked with fruit trees; and the whole of the property lies within 1½ mile of the Camborne Station of the West Cornwall Railway, and distant from Hayle six miles, and from Penzance about 13 miles.

Also, THREE LIFE INSURANCE POLICIES, each effected on the death of the survivor of the two younger lives, and amounting together to the total sum of £1599 19s. Two of such policies granted by the Scottish Equitable Life Office on the 26th July, 1849, for the sum of £800 each, under an annual premium of £5 16s. for continuing each policy; and the remaining policy granted by the Scottish Amicable Life Office on the 27th May, 1852, for the sum of £2999 19s., under an annual premium of £26, for continuing such last-mentioned policy. The three policies, with the residence and farms, will be submitted for sale in One Lot, offering to capitalists a fine and rare opportunity for a safe and desirable investment.

For viewing the premises, application may be made to Mr. THOMAS RICHARDS, at the house; or to Mr. BENNETT, the tenant of the farm; and for any further information to the auctioneer; or to Messrs. ROWN, DARRK, and COXWELL, solicitors, Penzance, Cornwall.—Dated March 4, 1857.

#### VERY EXTENSIVE SALE OF ENGINES AND MINING MATERIALS.

**MR. BROWNE AND MR. CLYMA** have been favoured with instructions to SUBMIT TO SALE, BY PUBLIC AUCTION, on Monday, the 30th day of March inst., and following day, at Eleven o'clock in the forenoon of each day, at GREAT POLGOOTH MINE, near St. Austell, Cornwall, the WHOLE of the extensive and valuable MINING MACHINERY, MATERIALS, and OTHER EFFECTS thereon—viz., One 80 in. cylinder PUMPING ENGINE, 10 ft. in cylinder, 9½ in. shaft, with 4 bolts 48 in. in pump, 21 fms. complete; 1 67 in. cylinder pumping engine, 10 ft. in cylinder, 9 ft. in shaft, with 2 bolts 10 tons, and first piece of rod and cap; 1 35 in. cylinder engine, used for stamping, 10 ft. stroke, with 2 bolts 20 tons, 120 heads, iron stamps, axles, frames and connections, complete; 1 24 in. cylinder engine, used for stamping, 7 ft. stroke, with 2 bolts 10 tons, iron stamps, axles for 45 heads, frames, &c.; 1 22 in. cylinder winding engine, with 7 tons boiler, iron cage, &c., attached to this engine is a crusher, complete; 2 22 in. cylinder winding engines, each with 7 tons boiler, iron cage, &c.

An iron balance-bob, complete.  
4 large balance-bobs, and 1 angular do.  
3 8-armed capstans, oak axle, and iron sockets.  
1 small iron capstan, oak axle, and iron sockets.

3 19 in. plunging-lifts, with 20 in. pumps, 93 fms., complete.  
1 17 in. drawing-lift, with 18 in. pumps, 22 fms., complete.  
2 15 in. drawing-lifts, with 16 in. pumps, 27 fms., complete.  
1 11 in. plunging-lift, with 16 in. pumps, 46 fms., complete.  
1 10 in. plunging-lift, with 10 in. pumps, 45 fms., complete.  
2 14 in. plunging-lifts, with 11 in. pumps, 80 fms., complete.  
2 10 in. drawing-lifts, with 18 in. pumps, 21 fms., complete.  
2 11 in. drawing-lifts, with 18 in. pumps, 23 fms., complete.  
1 7 in. drawing-lift, with 9 in. pumps, 12 fms., complete.  
1 11 in. plunging-lift, with 9 in. pumps, 35 fms., complete.  
1 6 in. drawing-lift, with 7 in. pumps, 6 fms., complete.  
2 9 ft. 14 in. pumps, and 4 9 ft. 8 in. and 9 in. pumps.

Bolts, burrs, rings, brasses, clacks, buckets and rods, to match the above.  
170 fms. 14 in. Melmel and other rods.  
98 fms. 12 in. ditto.  
150 fms. 11 in. ditto.  
30 tons hammered iron and other strapping-plates.

Two weighing bridges; 21 tons whim-chain, principally 9-16 in.; 50 tons of useful wrought and cast-iron of every description; 15 tram wagons; 5 railroad wagons; 20 steam whim and other kibble; 170 fms. 7 in. flat rods, with connection plates and bolts, complete; wrought-iron drying tube; 2 double crank winches; 7 pair hammer iron yokes; 2 large drop screws; 20 fms. ladders; 5 smith's bellows; 5 anvils; 2 mandrills; smith's and miners' tools; whim and shaft pulleys; chain pulleys; shaft rolls; signal wire; several stamps' axles and wheels; cast, blistered, and gad steel; new iron; several sets of blocks; pressure engine; 3 dials, with quadrants, &c.; screwing stocks, taps, plates, and rests; wood sheds; pulley frames; barrows; several hundred lots of useful new and old timber; and every useful material requisite for mining.

The auctioneers, in inviting attention to the above valuable property, beg to state that the whole will be found well worthy attention. Most of the engines were erected new a few years since, on the most approved construction; and for their general superiority, see *Brown's Cornish Engine Reporter*. Good shipping ports are in the immediate neighbourhood, where there is every facility for conveying the engines or materials to any part of the United Kingdom.

It is intended to offer the engines and pitwork, with their connections, for sale on the first day; and, as the lots are numerous, a punctual attendance is requested. Refreshments will be provided.

For viewing the same, application should be made to the agents, on the mine; and further particulars may be obtained on application to W. C. FULLER, Esq., 55, Old Broad-street, London; or of Mr. BROWNE, St. Austell, or Mr. CLYMA, Truro, the auctioneers.—Dated March 2, 1857.

#### MINING MACHINERY AND MATERIALS FOR SALE.

**MR. GUMMOR** is instructed to SELL, BY PUBLIC AUCTION, at WHEEL MARSHALL, in the parish of St. Stephen's, by St. Austell, on Thursday, the 28th inst., at Twelve o'clock in the forenoon, the following MACHINERY and MATERIALS, comprising—

A water-wheel, 46 ft. diam., 3 ft. abrest (within), with cast-iron axle and sockets, complete.  
A 16 ft. water-wheel, 3¼ ft. abrest, wood axle, crank, &c., complete.  
A 14 ft. water-wheel, 3¼ ft. abrest, with six heads of stamps attached, complete.  
A water-wheel, 13½ ft. diam., and 4 ft. abrest, with wrought-iron axle and sockets, and eight heads of stamps, complete.  
10 fms. 9 in. drawing-lift, complete; main and bucket rods, capstan and shears, lance-bob, chain, whim-whim, shaft pulleys, three new stamps' heads, grate plates, steel, round and flat iron, stamps' lifters, three new stamps' heads, grate plates, buddles and racks, dressing tools, shed, grinding-stone, sledges, vice, carpenter's bench, borers, weights, a quantity of timber, and sundry other articles.  
Dated Imperial Fire and Life and National Life Stock Insurance Office, St. Austell, March 19, 1857.

#### YEOLAND CONSOLS TIN MINE, NEAR PLYMOUTH.

**MR. HENRY WILLS** is instructed to OFFER FOR SALE, BY PUBLIC AUCTION, in One Lot, at the Globe Hotel, Plymouth, on Monday, the 23d of March next, at One o'clock precisely, the valuable MINE MACHINERY, MATERIALS, ORES, STORIES, &c., forming the whole of the property of the shareholders in, and on the Mine, comprising—

1 56 in. rotary double-action STEAM-ENGINE, with 11 tons fly-wheel, wrought-iron shafts, screw-rod, and two boilers, 10 and 9 tons each; 2 cast-iron STAMPS AXLES, to carry 12 heads each, and 24 heads of stamps, with frames, &c.; 1 22 in. double action DRAWING ENGINE complete, with 10 tons boiler.  
44 fms. of 3¼ round iron rods, with joints and pins, complete.  
32 fms. 2 in. ditto, ditto.  
50 fms. 1½ in. ditto, ditto.  
2 shaft bobs complete.  
2 logging bobs complete.  
8 iron capstans.  
140 fms. of 9 in. capstan rope.  
300 fms. of contractors' metals.  
1 shears, 42 ft., with shives, complete.  
200 fms. of ¾ and ½ best chain.  
200 fms. old chain.  
14 fms. flat rope pulleys and stands.  
12 pulleys and stands for 2½ in. rods.  
12 pulleys and stands for 2 in. rods.  
4 horse-whim pulleys, and 1 large capstan shive.  
3 8 in. plunging-lifts, respectively 18 fms., 35 fms., and 30 fms.  
1 8 in. drawing lift, 12 fms. long.  
1 6 in. drawing lift, 13 fms. long.  
1 7 in. drawing lift, 19 fms. long.  
1 4 in. drawing lift, 10 fms. long.  
100 fms. of 8 and 9 inch wood shaft, with plates, &c., complete.  
300 fms. tram iron, 2½ by ¾, with saddles.  
7 iron tram-wagon, and 4 wooden ditto.  
New and useful iron, about 7 tons.  
Old iron, 5 tons.  
Shed, 300 ft. by 7 ft.  
Weighing machine, to weigh 1 ton.  
10 tin-dressing knives.  
3 round buddles.  
8 other buddles.  
8 iron dressing racks, with shed over.  
Small water-wheel.  
Wheel and hand barrows, and other dressing tools.  
3 large tin chests.  
Leather, oil, nails, hilt, &c.

The mine is held under a lease of 14 years from Christmas, 1854. The sett is extensive, and the royalty 1-20th until a dividend is paid, and then 1-15th.

The auctioneer respectfully invites attention to this property, being assured that, by the judicious outlay of a moderate capital, a dividend-paying mine will result. For further particulars, apply to the auctioneer, at his office, 17½, George-street, Plymouth; and to view, to the agent on the mine.

#### IMPORTANT IRON SALE AT SUNDERLAND, IN THE COUNTY OF DURHAM.—PRELIMINARY ADVERTISEMENT.

**SALE BY AUCTION AT BISHOPWEARMOUTH IRONWORKS.**

**MR. GEO. HARDCASTLE** has the honour of being commissioned by the Derwent Iron Company (prior to their disposing of the extensive and valuable property known as the Bishopwearmouth Ironworks), to SELL, BY PUBLIC AUCTION, upon the premises, about the middle of the month of April next, a large quantity of UNMANUFACTURED SCRAP IRON and CAST METAL; Malleable Iron Shafting; New and Old Timber; Smith's Tools, Anvils, Bellows, &c.; capital Pumping Machine; large Boring Machine; Iron Ballast Trucks; Travelling Cranes; Bogies, Carts, Wagons, &c.; Boilers, Shear Legs, Old Rails, Miscellaneous Machinery, and Portions of Engines, &c.

Particulars will be given in catalogues and future advertisements.—Further information may be obtained on application at the offices of the ironworks, Bishopwearmouth, to Messrs. MOUSSET, LAMSON, and CO.; or to GEORGE FORSTER, Esq., Consul Ironworks; or to the auctioneer.

Sunderland Sale Office, Feb. 26, 1857.

#### INNEY CONSOLS, NEAR LAUNCESTON.

**MR. HENRY BURT** will SELL, BY AUCTION, on Thursday April 3, 1857, the following valuable MINE MATERIALS:—OVERSHOT WATER-WHEEL, 35 feet by 10 feet, cast-iron axle and ring, connecting and traveller; drawing machine, cast-iron connecting gear; 12-head stamps, cast-iron axle, connecting gear; 70 fms. 2¼ inch iron flat-rods; flat-rods pulleys and stands; 25 fms. main rod; 2 balance bobs; capstan and shears; purchase wine; 70 fms. capstan rope (12 inch); 15 fms. 12-inch pumps, working barrel, doorpiece, and wind-bob; 18 fms. 9-inch pumps, working barrel, wind-bob, and doorpiece; a large quantity of iron and timber; tramroad iron; smith's bellows, anvil, tools, &c. A complete furniture, grindstone, &c.; wooden ladders, air-pipes, &c. An excellent miner's dial.—Particulars may be had of the Auctioneer, or of A. H. PATTERSON, C.E., Launceston.—Newport, Launceston, March 16, 1857.

#### COLLIERIES IN THE FOREST OF DEAN.—TO BE SOLD.

BY AUCTION, pursuant to an Order of the High Court of Chancery, made in the Causes of MURKET v. CLIFFE and OTHERS, and BAILEY and OTHERS v. MURKET and OTHERS, with the approbation of Vice-Chancellor Sir JOHN STUART, the Judge to whose Court the said causes are attached, at the Bear Inn, at Newnham, in the county of Gloucester, by Mr. CHAS. BURTON, the person appointed by the said Judge for that purpose, on Friday, the 17th day of April, 1857, at Two o'clock



from a sore leg, as notwithstanding he tried everything that medical skill could devise, yet all was to no purpose; no cure was effected until he made use of Holloway's Ointment and Pills. These invaluable medicines soon had the desired effect, for in a few weeks his leg was completely healed, and he wishes publicly to give the fact, that others might derive the same benefit.—Sold by all medicine venders throughout the world; at Prof. Holloway's establishments, 244, Strand, London; and 80, Maiden-lane, New York; A. Stampa, Constantinople; A. Gaidley, Smyrna; and E. Meier, Malta.



## THE MINING SHARE LIST.

Shares.	Mines.	Paid.	Last Price.	Present.	Dividends per Share.	Last Paid.
5120	Alfred Consols (cop.), Phillack [S.E.] 21. 11a. 100.	234 1/2	23 23	216 1 0	0 0	Feb. 2, 1857.
1824	Baldwin (tin), St. Just.	11 1/2	11 1/2	12 5 0	0 0	Jan. 1, 1854.
4600	Bedford United (copper), Tavistock.	2 1/2	2 1/2	18 1 0	0 0	Jan. 1, 1857.
240	Boscan (tin), St. Just.	10 1/2	10 1/2	15 0 0	0 0	Mar. 4, 1857.
200	Botallack (tin), cop., St. Just.	9 1/2	225	291 5 0	0 0	Feb. 17, 1857.
100	Brighton and Froggatt Grove, Derbyshire.	50	66	3 0 0	0 0	Apr. 30, 1856.
100	Brynmor Hall (tin), Flint.	20	100	13 0 0	0 0	July 31, 1856.
1000	Bryntall, Llanidloes, Montgomeryshire.	7	4	0 5 0	0 0	July 1, 1856.
1000	British (silver-lead), Cardiganshire.	3	1	0 2 0	0 0	July 30, 1856.
1000	Carn Brea (copper, tin), Illogan.	15	62 1/2	233 10 0	2 0	Feb. 18, 1857.
2048	Carnarvon (tin), St. Just.	4 1/2	3 1/2	0 15 0	0 0	June 10, 1856.
204	Cefn Cwm Erwyd (lead), Cardiganshire.	33	185	3 0 0	0 0	Sept. 4, 1855.
256	Cenarth (copper, tin), Camborne [S.E.]	20	185	0 0 0	0 0	Feb. 28, 1856.
30000	Crown Moor, Limited (lead), Yorkshire.	60	140	70 0 0	0 0	Aug. 28, 1856.
128	Cwmystwith (lead), Cardiganshire.	60	140	70 0 0	0 0	Aug. 28, 1856.
280	Derwent Mines (silver-lead), Durham.	304 1/2	150	104 5 0	10 0	Sept. 30, 1856.
1024	Devon Great Mines (cop.), Tavistock [S.E.]	1	460	542 0 0	14 0	Jan. 23, 1857.
672	Ding Dong (tin), Guilt.	33	30 32	16 7 6	1 10	Mar. 2, 1857.
179	Dolcoath (copper, tin), Camborne.	257 1/2	310	913 0 0	6 0	Feb. 9, 1857.
13800	Drake Walls (tin, copper), Calstock.	12 1/2	3 1/2	0 9 0	0 0	July 28, 1856.
300	East Daren (lead), Cardiganshire.	32	85	21 0 0	3 0	Feb. 19, 1857.
128	East Pool (tin, copper), Pool, Illogan.	24 1/2	340	280 0 0	7 10	Feb. 23, 1857.
1024	East Wheel Margaret (tin, copper).	6 1/2	11	0 5 0	0 0	Jan. 11, 1854.
1400	Eway Mining Company (lead), Derbyshire.	5	35	10 3 4	0 10	Feb. 26, 1857.
4940	Fowey Consols (copper), Tywardreath.	4	6 1/2	41 4 3	0 0	Feb. 17, 1857.
4448	General Mining Co. for Ireland (cop. lead).	3 1/2	3	1 0 8	0 3	June 5, 1853.
1024	Gonnamena (copper), St. Austell.	13 1/2	17	0 7 8	0 7	Dec. 21, 1852.
8000	Great South Wales (S.E.)	2 1/2	18 1/2	0 2 6	0 2	June 2, 1855.
36888	Great Wharfedale (tin), Halifax [S.E.]	2 1/2	8 1/2	0 0 0	0 0	June 29, 1855.
119	Great Wym (tin), Gernoe.	100	140	231 10 0	7 10	Feb. 27, 1857.
1024	Herdfoot (lead), near Liskeard.	8 1/2	6 1/2	2 12 6	0 7	Apr. 18, 1854.
6000	Heron Down Consols (copper), Calstock.	3 1/2	4 1/2	2 16 0	0 2	Nov. 23, 1856.
2000	Holyford (copper), near Tipperary.	11 1/2	8 1/2	4 2 6	0 0	Jan. 28, 1857.
3500	Ile of Man (Limited).	25	42	53 17 3	1 10	Mar. 5, 1857.
76	Jamaica (lead), Mold, Flintshire.	21 1/2	6d.	390 0 0	5 0	Mar. 10, 1851.
20	Laxey Mining Company, Isle of Man.	1000	85	1370 0 0	50 0	Jan. 17, 1857.
160	Levant (copper, tin), St. Just.	200	85	1058 0 0	2 0	Feb. 17, 1857.
5000	Levi's Mines (tin, copper), St. Erth.	5 1/2	3 1/2	0 10 0	0 10	Dec. 20, 1855.
400	Lisburne (lead), Cardiganshire, Wales.	13 1/2	12 1/2	251 0 0	4 0	Feb. 5, 1857.
6000	Marke Valley (copper), Caradon.	41 1/2	6d.	0 5 0	0 0	Sept. 7, 1855.
5000	Mendip Hills (lead), Somerset.	3 1/2	1 1/2	1 2 6	0 5	May 21, 1856.
5000	Merrilyn (lead), Flint.	3	1 1/2	1 11 0	0 2	June 22, 1855.
30000	Mining Co. of Ireland (copper, lead, coal).	7	15 1/2	12 5 0	0 10	Jan. 1, 1857.
5000	Nantes and Penrhyn, Limited (2 1/2 shares).	1 1/2	2 1/2	0 1 6	0 1	Apr. 30, 1855.
7500	Nantlle Vale (lead), Llanfyllin.	1	1 1/2	0 3 0	0 1	May 21, 1856.
6400	Nether Heath, Westmoreland.	2 1/2	3 1/2	0 2 0	0 1	May 21, 1856.
470	Newlands Mining Company, Co. Down.	40	32	49 0 0	0 0	Oct. 13, 1856.
200	North Pool (copper, tin), Pool.	23 1/2	70	324 0 0	2 0	Dec. 26, 1854.
140	North Roake (copper), Camborne.	100	100	240 10 0	4 0	Sept. 26, 1853.
6000	North Wheel Basset (cop., tin), Illogan [S.E.]	10 1/2	34	12 3 0	0 15	Feb. 25, 1857.
6400	Par Consols (copper), St. Blaize [S.E.]	1 1/2	23	28 4 0	1 6	Mar. 3, 1857.
500	Peak United (lead), North Derbyshire.	7 1/2	9 1/2	4 10 0	0 10	Apr. 12, 1856.
200	Phoenix (copper, tin), Llanfyllin.	100	365	204 10 0	30 0	Nov. 12, 1856.
1000	Pollorro (tin), St. Agnes (Preferential).	15	15	15 10 0	1 0	Jan. 10, 1857.
560	Providence Mines (tin), Ury Lelant.	204 1/2	87 1/2	57 4 6	5 0	Feb. 18, 1857.
3500	Rhosydwol and Bacheiddon (lead).	11 1/2	13	0 7 0	0 0	June 18, 1856.
512	Rosewarne United (copper, tin), Gwinnar.	12	45	30 0 0	1 0	Feb. 9, 1857.
13000	Sorridge Consols (cop.), Whitechurch [S.E.]	6 1/2	1 1/2	0 7 6	0 2	Oct. 28, 1856.
256	South Caradon (copper), St. Cleer [S.E.]	2 1/2	350	446 0 0	10 0	Jan. 27, 1857.
128	South Caradon (copper), St. Cleer [S.E.]	2 1/2	350	446 0 0	10 0	Jan. 27, 1857.
256	South Talsarn (copper), Redruth.	300	155	60 0 0	2 0	Jan. 18, 1856.
406	South Wheel Frances, Illogan [S.E.]	18 1/2	350	243 5 0	10 0	Jan. 27, 1857.
1024	Sparrow Consols (tin), St. Just, Cornwall.	3	4	8 8 6	0 2	Dec. 10, 1853.
280	Sparrow Moor (copper), St. Just.	23 1/2	15	4 5 0	0 10	June 13, 1856.
979	St. Aubyn and Grylls (cop., tin), Breage.	51 1/2	4 1/2	0 17 6	0 7	Apr. 1, 1852.
94	St. Ives Consols (tin), St. Ives.	80	120	903 0 0	8 0	Feb. 17, 1857.
9580	Tamar Consols (sil.-lead), Beeralston [S.E.]	4 1/2	1	4 13 6	0 2	Feb. 7, 1856.
6000	Tinroff (copper, tin), Pool, Illogan [S.E.]	9	4 1/2	7 18 6	0 5	Feb. 9, 1857.
2048	Trehas (silver-lead), Menheniot.	3 1/2	18 1/2	8 11 3	0 5	Dec. 29, 1855.
572	Trevelyan Consols (tin), St. Ives.	11 1/2	18 1/2	15 15 0	1 0	May 21, 1856.
96	Trevelyan (copper), Gwennap, Cornwall.	22 1/2	8 1/2	467 15 0	1 0	Jan. 18, 1854.
120	Trevelyan (copper), Gwennap, Cornwall.	15 1/2	3	403 13 6	2 10	Apr. 29, 1851.
400	Trevelyan (copper), Bodmin.	12 1/2	3	0 5 0	0 5	July 8, 1856.
4096	Trevelyan (silver-lead), Menheniot, Cornwall.	2	3 1/2	1 9 0	0 3	Dec. 10, 1856.
100	Trumpet Consols (tin), near Helston.	95	60	55 0 0	5 0	Dec. 20, 1854.
400	United Mines (copper), Gwennap [S.E.]	40	230	61 5 0	2 0	Feb. 12, 1856.
30000	Vale of Towy (lead), Carmarthen [S.E.]	1	1	0 3 3	0 1	May 8, 1856.
10500	Welsh Potash (silver-lead), Talybont, Card.	5	3 1/2	1 0 0	0 0	July 16, 1855.
2000	Widit (New Shares of 5s. each).	3	3 1/2	0 12 0	0 0	July 16, 1855.
6000	West Basset (copper), Illogan [S.E.]	1 1/2	35	9 8 6	0 0	Jan. 19, 1857.
256	West Caradon (copper), Liskeard [S.E.]	20	170	278 5 0	4 0	Mar. 19, 1857.
256	West Damsel (copper), Gwennap.	410 7	130	16 0 0	2 0	Jan. 19, 1857.
1024	West Providence (tin), St. Erth.	5	14	27 15 0	0 10	Jan. 19, 1857.
400	West Wheel Seton (copper), Camborne.	38 1/2	360	61 10 0	2 0	Oct. 16, 1856.
1328	Wheel Arthur (copper), Calstock.	7 1/2	8 1/2	2 0 0	1 0	Oct. 14, 1855.
240	Wheel Bar (tin), St. Just.	6 1/2	8 1/2	2 0 0	1 0	Oct. 14, 1855.
512	Wheel Basset (copper), Illogan [S.E.]	5 1/2	270	430 10 0	8 0	Feb. 3, 1857.
256	Wheel Buller (copper), Redruth [S.E.]	5 1/2	360	821 5 0	5 0	Mar. 18, 1857.
1024	Wheel Charlotte, Perranruth.	3 1/2	4	1 10 0	0 10	Sept. 9, 1855.
256	Wheel Clifford (copper), Gwennap.	520	520	33 0 0	8 0	Feb. 18, 1857.
5700	Wheel Foxmouth and Adams United.	41 1/2	8	2 8 0	0 3	Dec. 22, 1856.
5000	Wheel Fortescue, Bodmin.	10 1/2	8	2 4 0	0 3	Dec. 22, 1856.
128	Wheel Friendship (copper), Devon.	95	95	237 15 0	0 0	May 10, 1854.
1024	Wheel Grylls (copper, tin), Breage.	20	30	0 2 0	0 2	Feb. 24, 1857.
512	Wheel Jane (silver-lead), Kea.	3 1/2	30	5 10 0	1 0	Feb. 13, 1857.
5000	Wheel Kitty (tin), St. Agnes.	8	8	0 3 0	0 3	Dec. 22, 1856.
1024	Wheel Kitty (tin), Ury Lelant [S.E.]	21 1/2	20	3 5 0	0 15	Dec. 15, 1856.
430	Wheel Lovell (tin), Wendron.	33	18	31 0 0	1 0	Sept. 5, 1856.
448	Wheel Margaret (tin), Ury Lelant.	19 1/2	65	73 0 0	4 0	Feb. 24, 1857.
1024	Wheel Mary Ann (lead), Menheniot [S.E.]	8	46	25 12 6	2 0	Mar. 10, 1857.
40	Wheel Mary Ann (lead), St. Just, Cornwall.	70	260	40 10 0	3 0	Feb. 16, 1857.
240	Wheel Mary Ann (lead), St. Just, Cornwall.	70	260	40 10 0	3 0	Feb. 16, 1857.
108	Wheel Seton (tin), Camborne.	107	150	274 10 0	2 10	Feb. 2, 1857.
1040	Wheel Trelawny (sil.-ld.), Liskeard [S.E.]	4 1/2	24	26 10 0	0 15	Feb. 2, 1857.
1024	Wheel Tremayne (tin, copper), Gwinnar.	10 1/2	7	10 2 6	0 7	Jan. 11, 1854.
4096	Wheel Wrey (lead), St. Ives.	11 1/2	28 1/2	2 6 0	0 3	Mar. 17, 1857.
5000	Wicklow (copper), Wicklow.	5	28 1/2	26 5 6	0 12	Jan. 8, 1857.

(\* Dividends paid every two months. + Dividends paid every three months.)

## FOREIGN MINES.

Shares.	Mines.	Paid.	Last Price.	Present.	Dividends per Share.	Last Paid.
5000	Alten Mining Company (copper), Norway.	214 1/2	2	4 5 0	0 15	Nov. 21, 1853.
51848	Baden, Grand Duchy of.	1	1	0 10 0	0 10	Nov. 6, 1852.
10000	Brasilia Imperial (gold), Brazil [S.E.]	26 1/2	1 1/2	34 17 6	0 10	Dec. 1844.
2464	Burra Burra (copper), South Australia.	5	119	175 0 0	0 0	Sept. 4, 1856.
13000	Cobre Copper Company (cop.), Cuba [S.E.]	40	61	84 12 0	3 0	Feb. 10, 1857.
100000	Colonial Gold, Australia.	1 1/2	14 1/2	0 1 6	0 1	Mar. 28, 1854.
10000	Copio Mining Company, Chile [S.E.]	30	14	9 10 0	0 10	June 28, 1856.
30000	General Mining Assoc., Nova Scotia [S.E.]	3	8 1/2	2 15 6	0 5	Sept. 18, 1856.
15000	Linares (lead), Pozo Ancho, Spain [S.E.]	3	1 1/2	0 3 0	0 1	Sept. 3, 1856.
10000	Lusitania (of Portugal) [S.E.]	1 1/2	1 1/2	0 3 0	0 1	Jan. 29, 1857.
13815	Mariquita and New Granada [S.E.]	1	1 1/2	0 3 0	0 1	Sept. 28, 1855.
25000	Peninsular Mining Company (Limited).	1	1 1/2	0 2 6	0 2	Sept. 28, 1855.
10000	Pontgibaud (silver-lead), France [S.E.]	20	9	1 0 0	1 0	June 28, 1855.
7000	Royal Santiago (copper), Cuba [S.E.]	15 1/2	2 1/2	33 0 0	1 5	July 12, 1848.
104000	San Fernando (silver-lead), Linares.	1	36 6d.	0 19 0	0 7	June 30, 1854.
11000	St. John del Rey (gold), Brazil [S.E.]	1	31	81 10 0	0 0	Nov. 25, 1852.
81174	Union Lead (silver), Mexico [S.E.]	1 1/2	1 1/2	1 16 6	0 0	Feb. 14, 1853.
70000	Waller (gold), Goldfield, California.	1	1 1/2	0 9 0	0 9	July 2, 1853.
30000	Mexican and So. Amer. Smelting Co. [S.E.]	10	3 1/2	6 15 0	0 7	Dec. 12, 1855.
8974	North British Australasian [S.E.]	1	1 1/2	0 1 8	0 1	Apr. 17, 1855.

## NON-DIVIDEND FOREIGN MINES.

Shares.	Mines.	Paid.	Last Price.	Present.	Dividends per Share.	Last Paid.
75000	Adelaide Land and Gold Com.	2	1 1/2	1 1/2	1 1/2	1 1/2
35000	Almaden (silver-lead), Spain.	2	1 1/2	1 1/2	1 1/2	1 1/2
20000	Australasian [S.E.]	2	1 1/2	1 1/2	1 1/2	1 1/2
6000	Chanceryville (silver), Nevada [S.E.]	1	1 1/2	1 1/2	1 1/2	1 1/2
80000	Clarendon Consols [S.E.]	1	1 1/2	1 1/2	1 1/2	1 1/2
5840	Claude Mining Company.	21 1/2	1 1/2	1 1/2	1 1/2	1 1/2
35000	Copper Miners of Eng. [S.E.]	27	33 37	33 37	33 37	33 37
12000	Ditto, Pref. 7 1/2 per cent. [S.E.]	25	26	26	26	26
12400	Fort Bowen, New Granada.	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
25000	Fortuna.	2	1 1/2	1 1/2	1 1/2	1 1/2
18000	Great Nugget Vein.	1	1 1/2	1 1/2	1 1/2	1 1/2
25000	Iberian, Limited (sil.-ld.), Spain.	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
2369	Kinrighal Min. Ass., Germany.	4	1 1/2	1 1/2	1 1/2	1 1/2
6000	Liberty.	1	1 1/2	1 1/2	1 1/2	1 1/2

## PROGRESSIVE MINES.

Shares.	Mines.	Paid.	Last Price.	Present.	Dividends per Share.	Last Paid.
6000	Abbey Consols (lead), Cardigan.	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
1024	Aberdovey (lead), Merioneth.	2 1/2	1 1/2	1 1/2	1 1/2	1 1/2
10000	Arundell (cop.), near Ashburton [S.E.]	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
940	Balmuccia Consol. (tin), Ury Llan.	3 1/2	4 1/2	4 1/2	3 1/2	3 1/2
4660	Ballyvirgin, Co. Clare.	2 3/4	3 1/4	3 1/4	2 3/4	2 3/4
10000	Bampfliffe (copper), Devon.	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
6000	Basnet Graze United (cop.), Kea	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
4000	Bedford Consols	8s.	8s.	8s.	8s.	8s.
7000	Berallston United, Devon.	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
508	Bell and Lanarth, Gwynep	11	3 1/2	2 1/2	3 1/2	3 1/2
230	Benders (Limited)	150	150	150	150	150
150	Blenbow Consol. (copper)	210	16 1/2	7 1/2	210	16 1/2
1000	Boiling Well (copper)	15	7 1/2	7 1/2	15	7 1/2
6000	Bolenowe	21	16 1/2	7 1/2	21	16 1/2
1130	Bridford Consols.	27	14	7 1/2	27	14
2000	Bryn Wood, Backfastleigh	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
3000	Bryn-y-Pedwen (lead)	3 1/2	1	1	3 1/2	1
6000	Buckland Consols (copper)	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
120	Buckland Consols (tin), Ferran	2 1/2	10	10	2 1/2	10
1000	Buck and Burrell (Limited)	1	4 1/2	4 1/2	1	4 1/2
1200	Buller and Bertha	1	1	1	1	1
812	Butterdon (lead)	28	16 1/2	3 1/2	28	16 1/2
5000	Ca-Cynon, Cardiganshire	10s. 6d.	10s. 6d.	10s. 6d.	10s. 6d.	10s. 6d.
4000	Calatock Consols (copper)	4 1/2	3 1/2	3 1/2	4 1/2	3 1/2
2115	Calatock United (tin and cop.)	20 2	10	7 1/2	20 2	10
1000	Camborne Consols	10	7 1/2	6 1/2	10	7 1/2
920	Camborne Vein & Wh. Frances	12 1/2	12 1/2	12 1/2	920	12 1/2
1160	Cardon, W. St. Clear	10	5 1/2	5 1/2	1160	5 1/2
23	Carllog, Newydd	25	45	45	23	45
5000	Carnwae (lead, cop.), Mawgan	3 1/2	4 1/2	4 1/2	5000	4 1/2
1055	Carvallonn (copper), Gwynep	11	6	6	1055	6
4000	Carvath United, St. Austell	2 1/2	1	1	4000	1
6000	Castell (lead and blende), Card.	11s. 6d.	11s. 6d.	11s. 6d.	6000	11s. 6d.
9000	Catherine and Jane Consols	1	1 1/2	1 1/2	9000	1 1/2
6000	Cefn Gwyn (sil.-ld.), Cardigan.	1	1 1/2	1 1/2	6000	1 1/2
920	Cilgub & W. Cwrt. (cop.)	19 1/2	5 1/2	6	920	5 1/2
5000	Cloanwode Wood, Gwynep	19 1/2	5 1/2	6	5000	5 1/2
2900	Cod Mawr Pool (ld.), Llanrwst.	6 1/2	6 1/2	6 1/2	2900	6 1/2
1000	Collascombe (copper)	10	45	40 45	1000	45
2450	Kos's Kitchen, Illogan	215	18 9	4 1/2	2450	18 9
256	Copper Hill	3s.	190	180 190	256	190
1855	Cradock Moor (cop.), St. Clear.	8	37	37	1855	37
9000	Cubert (silver-lead), Cornwall.	3 1/2	1 1/2	1 1/2	9000	1 1/2
6000	Cwm Eder, Cardiganshire.	1	1 1/2	1 1/2	6000	1 1/2
9000	Cwm Sebor (Limited)	23 1/2	1 1/2	1 1/2	9000	1 1/2
300	Dale Mine (lead), N. Stannard.	12	60	60	300	60
2440	Darhiew (cop. & ld.), Rhydyer	13	—	—	2440	—
1000	Daren (sil.-lead), Cardiganshire	6	5	4 1/2 5	1000	5
4090	Devon & Cornwall United (cop.)	24 6 3	7 1/2	7 1/2	4090	7 1/2